University of Alberta

To Write the Singularity: Literature, Technology, and the Myth of Transcendence

by

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the

requirements for the degree of Master of Arts

in

English and Film Studies

Humanities Computing

Edmonton, Alberta

Fall 2005

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Abstract

The Singularity is a concept with increasing influence amongst enthusiasts and researchers of technology. Along with the Singularity are mythical narratives associated with new, modern technologies, especially nuclear weapons, telecommunications networks, nanotechnology, genetic engineering, and virtual reality. The Singularity is a myth that the technologies themselves undermine as an exploration of their discursive positions demonstrates. The foundation of the transcendence through technology is the attempt to subvert the absence of death.

Literature provides an ideal structure with which to interrogate all the promises and deficiencies of new technologies because it interacts with the region of absence. Through an analysis of the otherness of developing technologies, this thesis posits the possibility to establish a productive ethics in adopting them and adapting to them. Furthermore, I explore the use of literature and, more generally art, in technology studies.

Acknowledgements

My first thanks are for Sean Gouglas and Stéfan Sinclair for laying the foundation for a unique and exemplary program. I also thank the community at the University of Alberta that founded and continues to support the Humanities Computing program. The Department of English and Film Studies does not require my thanks but I give it anyway; the staff, faculty, and students in this department inspire my work and myself every day.

Thank you as well to Wes Cooper, Stan Ruecker, Aimée Morrison, Brad Bucknell, Robert Brazeau, and the many others who taught me either formally or informally.

The Orlando Project not only gave me a way to afford graduate school but also provided me with two years of interesting work and fantastic people. Thank you to Pat Clements and Isobel Grundy, as well as all the other individuals I worked with on the Project.

It is impossible to thank Harvey Quamen enough for his intellectual influence and his personal example. My continued participation in academia is, in large part, his responsibility and my continued pleasure.

Finally, thank you to my loving and patient wife Bryn.

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Introduction

> In what follows we shall be *questioning* concerning technology. Questioning builds a way. . . . The way is a way of thinking. Always of thinking, more or less perceptibly, lead through language in a manner that is extraordinary. We shall be questioning concerning *technology*, and in so doing we should like to prepare a free relationship to it. The relationship will be free if it opens our human existence to the essence of technology. When we can respond to this essence, we shall be able to experience the technological within its own bounds. (Heidegger 287)

The question concerning technology, as translators often render the title to Martin Heidegger's famous essay, is a question for concern. I begin less with Heidegger as such than with the purpose he adumbrates. To think of technology, to question technology, initiates a process of thought that addresses this concern. The point of concern is not the answer to the question; the solution is untenable and ultimately inconsequential. Concern of and for the question of technology frames the contours of that question. Is it enough to ask how technologies assist humanity? Should the question concern its corresponding difficulties? Before I ask the question, should I not discern to whom or what I am asking? If the question concerns the inventors, then it forgets the users, most of who have little knowledge of the technology's workings. If the question concerns the users, then the population that lives alongside with the users and does not use the technology is lost. The respondent to questions concerning technology is the technology itself.

This conclusion presents the problem of considering technology as something other than constructed, impotent tools. To, as Heidegger writes, "experience the technological within its own bounds" the human must attempt to understand technology as such, rather than technology as product of the human. In a previously written, unpublished paper, I argue that technologies are closer to biological species in their relation to humanity than tools. This understanding emerges from Daniel Dennett's proposition that evolution is an algorithm rather than a specifically biological process (50). In the event that evolution is a process that includes all interacting entities, abiotic and biotic alike regardless of origin, then one can understand technologies symbiotic organisms akin to the bacteria that assist us in digestion. Technology supplements the human and in supplementing enacts a form of replacement, as Derrida's discourse on the supplement notes (" . . . That Dangerous" 1211). Supplementarity also implies a presence while disappearing of both the original and its supplement. Hence, a symbiotic relationship wherein multiple entities dependently coexist typifies our relationship with technology. This understanding of technologies as symbiotic to humanity rather than wholly controllable products provides a basis to explore the problems technologies produce.

Understanding technology as a symbiotic relationship introduces its otherness into play. In literary studies, the subject of the intentional fallacy arises regularly. One cannot assume to know the author's intentions in writing a work. This understanding allows for more productive interpretations, but also prevents definitive interpretation. Similarly, technology studies are victim to an intentional fallacy regarding the 'creator', which is usually a group of designers or at least a historical evolution. It is nonsensical to presume that one can intuit the designers'

intentions in the technology's development because, even if these were wholly known, intentions do not dictate the uses afforded by the technology nor its presence in culture. Within a cultural context, technologies move as though possessing a limited agency, one that I can speak *to* but never speak *for*. The point of technology that I speak towards is one of inalienable otherness. Thus, we can never ask the question concerning technology directly to technology because it resides at a limit of understanding.

This epistemological limit is why literature functions well as a site for interrogation. In this university alone, classes in law, anthropology, political science, and other social sciences, use literary works to explore issues that have suitable real examples for exploration. The question concerning literature is more direct than that of technology: why literature still?

Before discussing this question, I must briefly define literature. Literature, like the art for which I synecdochally use it, is an action to the other. Unlike some popular writing that satiates its readers and is more useful for cultural consumption studies, literature attempts to write to the absence that the other signifies. It wholly engages in an impossible task. This definition limits empirical classifications of literature, which is precisely its purpose. A work of literature attempts to address and identify itself to the reader and inevitably fails. This failure disrupts and compromises literature's subject and thereby creates a specific critique of the other, especially within the novel.

This thesis interrogates technology's limits through novels for historical and aesthetic reasons. The novel emerged as the predominant literary force during the Industrial Revolution, which is the historical rupture that still promotes modern

technologies. Furthermore, novels continue to be a widespread art form unlike poetry and drama, which cinema reduces to elitist obscurity. The novel, especially the North American novel, resides in a position of cultural interrogation. The American novelist Jonathan Franzen discusses the lessened influence of the social novel (e.g. Jane Austen's oeuvre) because modern technologies do a much better job of "social instruction" (65-6). The modern novel's position is antithetical to conventions because modern technologies oppose it—regular futurist predictions of the end of literacy and paper indicate this opposition. Franzen quotes his countryman, writer Don DeLillo, who claims, "Everything in culture argues against the novel. This is why we need the writer in opposition, the novelist who writes against power, who writes against the corporation or the state or the whole apparatus of assimilation" (qtd. in 177). However, this opposition must fail because the novel speaks to the real but always already falters at the real. The novel's aesthetic and force does not provide an ethical code but creates a site to think the real by what R. L. Stevenson labels "its immeasurable difference from life" (qtd. in Baudrillard, *Perfect* 94). The novel approaches the real but nevertheless remains unalterably other, which makes the novel an ideal medium for interrogating technology.

The Singularity, a mythical limit to the thinkability of technology, is an attempt by technological researchers to answer the unaskable question concerning technology. As a concept that presumes to discuss a time beyond which technology and human society are unpredictable, it supposedly proposes a limit to human knowledge; however, because this limit occurs in time, the Singularity refers to something humanity cannot understand now but may understand in time. The otherness, which defines the limits of thought, of technology, and of the human are

points for individuals to arrive at and pass, rather than unsurpassable moments of absence. The absence that figures at the limit of human understanding is that of death. Thus, the Singularity proposes a transcendence of death and a refiguration of mortality.

The scientific tropes of objectivity and progress support the Singularity, but they do not question the failures of complete knowledge. The attempt to transcend the ineffable does not occur. Instead it becomes increasingly apparent that ineffability exists within the known rather than as an external conquerable frontier. When, through its technologies, humanity approached the summit of Mount Olympus the Greek Gods, who, being myths, lived at the limits of Greek experiences, mythically moved into the Heavens; but now, as humanity positions the limit of knowledge within its own grasp, where will the gods move? They must move within the human. The limit of a thing necessarily exists within the thing itself.

The Singularity exposes the limits of technologies, that is, the limits that identify them as other with the human, within the technologies themselves. The Singularity emerges from a certain scientific frontier mentality reminiscent of Western expansion. As such, I explore the Singularity through the works of North American novelists. The Singularity is a concept that relates specifically to the human and technology is symbiotic to the human. Therefore, despite the Singularity's past in artificial intelligence research, I do not discuss artificial intelligence except insomuch as the Internet is often thought of an independent, artificially-constructed intelligence. Each of the particular technologies I discuss promise some form of technological transcendence with the exception of nuclear

weapons, which is a Singularity technology due to its cultural position as an already used limiting technology. Nuclear weapons provide a basis for discussing the imperative of thinking the technological unthinkable. Because nuclear weapons are unique among the technologies I discuss, they require unique works of literature to explore them. *A Canticle for Leibowitz* by Walter M. Miller Jr. is the only novel I use that was not written in the last decade and a half. The novelty of the other technologies, and the nature of the Singularity as a moment to pass, dictates that the discussions of those technologies require more recent novels. The discussion of nuclear weapons, as an already Singular technology, benefits from a novel written when the danger of nuclear holocaust was novel. Furthermore, the disappearance of nuclear weapons indicates the danger of refusing to think the supposedly unthinkable. Michael Ondaatje's novel The *English Patient* and its corresponding film adaptation provide a case study to understand the vanishing place of the nuclear amidst the promise of the Singularity. The other four technologies I analyze follow a hierarchy based on their relation to subjectivity.

Telecommunications networks, especially the Internet, operate primarily on a community level at the expense of individuality. This community relies on the absence death constructs for its stability. William Gibson's *Pattern Recognition* and Pat Cadigan's *Synners* provide modes for interrogating this technology. Both of these novels have a history in cyberpunk: a more or less defunct literary movement that glorified cyberspace as a new liberating frontier. Gibson's novel, his first not exclusively classified as science fiction, uses its cyberpunk heritage to address the modern Internet and the danger within its current manifestations. *Synners*, a novel destined to less influence than it deserves because it marks the peak of the

cyberpunk movement, explores problems of identity within an omnipresent communications network. The spectre of violence lives within and at the limits of the technologies that unite the globalized world. The past structure of demarcated nation-states and individualities dissipate within the broader network structure; however, the newly-constructed nodes, regardless of their identities, become sites of potential danger. Violence, which was an explosive spectacle in nuclear weapons, becomes always already present within the network. Thus, the role of spectacle shifts within the technology and ushers in a network of invisible violence.

The disappearance of violent death, which is an attempt to remove absence, continues through nanotechnology. Ironically, emphasis away from the spectacle results in a more spectacular society, one that exists of and through the vision of surveillance. Surveillance's expansive influence corresponds with a fixing of the biological body through its wholesale invasion and symbiosis with nanotechnology. Neal Stephenson, who marries the big writing, both in physical weight and ambitious ideas, of genre fiction with the confrontation of presence and absence definitive of the literary, writes the only nanotechnology novel worth reading. *The Diamond Age* deftly criticizes nanotechnological subjectivities while mapping the descent of the spectacle and the corresponding ascent of body-centred societies and invisible violence.

Genetic engineering is a technology that ostensibly eschews the artificial for the body. Unlike nanotechnology, genetic engineering influences many works of literature, as it is a technology that not only explicitly addresses the question of humanity but also clearly engages the line between art and technology. Is a genetically-engineered being a creation more so than a naturally-born child? And if

so, does it work within a particular aesthetic? Margaret Atwood's *Oryx and Crake* explores the trouble of art in the realm of genetic engineering while deliberating on the apocalyptic promise of new technologies. Alternately, *Gun, with Occasional Music* by Jonathan Lethem questions the construction of human nature as a consistent entity wholly related to the corpus. Genetics needs consideration as a technology in order to criticize it for ethical use. More so than the other technologies, the otherness of genetic engineering risks disappearing beneath rhetoric that its object is already at play.

Richard Powers' *Plowing the Dark* argues that Virtual Reality's claims to liberation from the physical and the political are suspect. Virtual Reality provides different problems than telecommunications networks because the latter keeps the user always aware of the technology's materiality whereas the former attempts to supplement reality to the point of erasure. The other technologies I criticize focus on the physical human and transcending the body. Virtual Reality constructs a false path to avoid the political and the personal. These claims are akin to those of the Singularity and Powers' novel is a powerful support for the role of the literary alongside with but in opposition to the Singularity-like promises of new technologies.

The question concerning technology is a concerned question that avoids answers most effectively by remaining unaskable. The unthinkability of specific technologies needs our efforts at thought in order to better integrate humanities with human relations, in this instance technology. To embrace technologies as inert tools that provide new and easy paths is erroneous and potentially disastrous, most of all because doing so ignores the death and disaster that haunt technological

developments. These ignored violences remain within the limit that contains them and are not eternally avoidable. The Singularity is an accelerated model of the conventional identification of technologies as solutions to problems. Instead, technologies, no matter how innocuous, are questions that enable one to ask more productive and important questions because they promote the thought of the unthinkable. The Singularity promotes a misidentification of technologies and a misunderstanding of humanity that I criticize through the productive interrogation of literary novels.

Chapter 1

The Death of the Singularity

The Singularity, a concept whose introduction supposedly occurred through an essay delivered in 1993 by Vernor Vinge, is not an original theory but rather a newly attempted solution for the older problem of the limit. According to Vinge, the Singularity is an inevitable cataclysmic social change ushered in by the coming development of superhuman intelligence through technological innovation, "a point where our old models must be discarded and a new reality rules" (Vinge par. 6). Specifically, as Vinge is a computer scientist, he conceives that this superhuman intelligence will either be wholly computer-based in the form of artificial intelligence, result from a human-computer hybrid, or emerge from a genetically-engineered human. Furthermore, as this superhuman change is greater than human or, more simply, different than human, the precise shape and contours of a post-Singularity civilization is outside human ken. Some, such as robotics researcher Rodney Brooks, regard any "speculation on the future . . . inherently dangerous and doomed to failure" (100). Yet most technological discourse dabbles in prophecy. The metanarrative of progress that produces many technologies emphasizes, to use business jargon (for capitalist rhetoric is never far from technology discussions), forward-thinking rather than backward-thinking. This emphasis explains the existence of the Singularity as an epistemological concept and the fact that many of its prophets are researchers and inventors first, social scientists and humanists second if at all. The future, through the Singularity, provides an epistemological

limit that is technological rather than spiritual. Thus, the Singularity proposes a solution to the intractable problem of unthinkability. The ineffable, which was once the habitation of God and ghosts, is now material and technological.

As Walter Benjamin wrote in his influential essay "The Work of Art in the Age of Mechanical Reproduction", before the rise of film the artwork was part of ritualistic and elitist behaviours and had already supplanted the religious as a site of ineffability and transcendence. Vinge's work as a science-fiction author of bloated space operas is significant here. His novels are not so much exercises in literature as they are spaces for him to imagine the Singularity as it will exist historically in the future. The Singularity marks another transformation of the ineffable from the artistic to the technological future. Thus, the Singularity is an attempt to objectify the otherness of technology.

The Singularity, by its definition, is indefinable; however, its temporality implies a certain definability-to-pass. As a product of multiple interacting technologies (Mone par. 6), predicting the precise shape of post-Singularity civilization is a mistake only allowable to fiction. But, unlike other unthinkable problems I discuss below and in following chapters, the Singularity does not wholly suspend thinkability but defers it to a later time period. The Singularity is a symptom of the postmodern[1] in that it eschews other realities for the Baudrillardean hyperreal. "We can no longer imagine any other universe: the grace of transcendence was taken away from us in that respect too" (Baudrillard, *Simulacra* 123). Transcendence is empirically identifiable as the time after the Singularity. This method promises an eventual unearthing of the unknown through science rather

[1] The postmodern refers to the current time period of postmodernity. While it is often misread as postmodernism, the two are as distinct as Marx and Marxism.

than the always already present otherness that permeates technologies and the social. Constructing an epistemological limit that will be overcome is an intellectually irresponsible manner to promote ideological biases.

By placing the Singularity in the future as a potential unknowable event of transcendence, technoprophets construct an argument to curb the regulation of technologies and promote a libertarian viewpoint. This argument ironically borrows from the environmentalist tenet of the precautionary principle that promotes preventing an activity or the use of a substance until the long-term ecological effects of that action or substance are known. In the technolibertarian ideology, one should not regulate technologies because the benefits are unknown and may be life-saving or liberatory. In her book *Cyberselfish*, Paulina Borsook identifies "high-tech's default political culture of libertarianism" (7) and its tendencies toward *laissez-faire* capitalism to the point of anarchy, which is the political system Kevin Kelly attributes to the Internet (*Out of Control* 464). Kelly, a prominent figure in digital culture, envisions the future bringing an increasing confluence between humanity and its machines in an organic relationship. Kelly's rhetoric inverts natural and synthetic meanings so that, for example, the word "organic" signifies an abstract identifier of emergence rather than a carbon-based object, its scientific meaning. Using the Internet as his metaphor, Kelly regards humanity and technologies as becoming tightly interwoven into an "emergent hive mind" that is outside of individual understanding and comprehension (*Out of Control* 28). This structure, with its "greater immunity to disruption" (Kelly, *Out of Control* 19), eschews outside regulation (e.g. governmental institutions) because its infrastructure supports it internally. Kelly's promise of internal support and his valorization of the

organic—"biology always wins in any blending of organic and machine" (*Out of Control* 183), although the organic is no longer necessarily biological—prevent the reader from questioning his metaphors and the specific technologies that are currently emerging.

Despite Kelly's admiration for biology, he regards the organic as only useful as an object for control by engineers. Kelly also opposes conservational environmentalism, as Nature is not a symbiotic partner with humanity but an object designed for abuse and rape by technological society; since "Nature has all along yielded her flesh to humans" (Kelly, *Out of Control* 2), any attempts at conservation and regulation are anti-humanist. These metaphors are not simply symptoms of inconsiderate writing, as Lakoff and Johnson's work reminds us. Phenomenological experiences construe the basis for metaphors, which correspondingly reflect and promote specific material occurrences. Alongside his metaphors that propose science and technology as active agents stripping a passive Nature, Kelly cannot prevent himself from injecting business into his discourse. When Kelly writes that "[l]ife on Earth obviously all comes from one transnational conglomerate" (*Out of Control* 102) not only attempts to naturalize the corporation but also turns the biological into another business. It comes as no surprise that Kelly's latest venture was the All-Species Inventory, which sought to catalogue, as though working for Sears, all the world's species and which, as of November 13, 2002, struggled due to lack of funding. This failure receives no mention in current biographies (including the one on Kelly's web page) and I had to search older versions of the web page www.all-species.org through Google's cache because the domain name is up for

sale, at the time of this writing[2]. There are numerous possible reasons for the failure of this catalogue: most practically the 'dot-com burst' and the corresponding drop of investment in high-tech projects. But the failure to mention the project's troubles is important because it signifies the importance of a cohesive myth of progress in new technological development. It does not matter if the individual technologies succeed or fail because the broader trend to the inevitable future is more important.

Brooks, who unlike Kelly does not envision himself as a cultural commentator, attempts to provide a tempered discussion of the future; however, because he is less prone to hyperbole, his work is more dangerous in its promotion of the Singularity. Like Kelly, Brooks never uses the term "the Singularity", whose use remains restricted to overzealous pundits such as the extropians and Ray Kurzweil's later writings. But, also like Kelly, Brooks deeply invests his rhetoric and research in the Singularity as a concept or, as Brooks phrases it, the point, in five years, when the "boundary between fantasy and reality will be rent asunder" (5). By positioning the Singularity within an imaginable time frame and in the context of his research, Brooks lends empirical credence to the end of its unthinkability over time. Furthermore, he criticizes fellow researchers Hans Moravec, Marvin Minsky, and Kurzweil for "succumb[ing] to the temptation of immortality in exchange for their intellectual souls" (205)—a backhanded criticism from a researcher who implicitly classifies the soul as an emergent property from a machine. Shortly after this criticism of the pursuit of immortality, Brooks predicts the near future for robotic technologies (230-2) and concludes that soon humanity will change in its

[2] A subsequent search shows that the All Species Foundation has repurchased the web space http://www.all-species.org and that Kelly refers to its earlier failure as a "major transition" ("ALL heading in major transition"). Thus, Kelly spins the history of this project into a progressive evolution towards the inevitable rather than a failing idea.

understanding of and relationships with machines. The human-machine hybrid is an inevitable and "irreversible journey" (ix) and any otherness between humans and machines will dissipate. Therefore, the epistemological limit that creates enmity between humans and machines, as manifested in works of science fiction, will end and, as Brooks implies despite his supposed disagreements with Kurzweil, utopia will emerge.

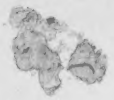
Kurzweil's work has taken the Singularity concept from Vinge and aggressively expanded and developed it so that it embodies the proposition of an inevitable and utopian future. The inevitability is due to the empiricism and corresponding objectivity myth of science from which the theory emerges. Constructing a myth of inevitability requires a direction or limit. Thus, like Jacques Lacan, "I begin with the limit, a limit with which one must indeed begin if one is to be serious, in other words, to establish the series of that which approaches it" (3). Whereas Lacan, who follows Sigmund Freud, writes of the limits of consciousness and knowledge always already present in the unconscious, Kurzweil only admits to future passable limits rather than present technological aporias. To begin with the *telos* is to craft a narrative of progress in which the means lose their importance because the end is not only fixed but also, in Kurzweil's formation, perfect. Kurzweil continues Vinge's focus on intelligent machines and begins his most influential book *The Age of Spiritual Machines* by presenting his pseudo-scientific Law of Accelerating Returns, which is partially based on the so-called Moore's Law on Integrated Circuits. Both laws note that technology, which Kurzweil identifies as an ordering of knowledge, progresses at an exponential rate. Of course, Moore's Law is little more than a general observation on the consistent doubling of processor

speed, akin to noting that the sun rises every day and, therefore, will, by Sun's Law, rise tomorrow. It is a long way from that solar observation to the system of Ptolemy, much less that of Copernicus. Furthermore, as a scientific model, the Sun's Law has limited predictive capability, just as Kurzweil's Law does. But Kurzweil's Law is not meant to be scientific or predictive beyond constructing a transcendent endpoint. The endpoint of Kurzweil's Law is the reconstructed nature of mortality.

As Brooks diagnoses and Kurzweil unabashedly admits, the Singularity's promise of transcendence stems from a desire for immortality. The simplistic critique of this desire is to pathologize it by shockingly rephrasing it: for example, Kurzweil's motivation is not the pursuit of immortality, it is a fear of death. Such arguments—Francis Fukuyama's, discussed with genetic engineering, is typical—naturalize death and designate any attempts to circumvent it as a psychotic fantasy (Žižek, "Of Cells" 305). Kurzweil confronts this argument in the prologue to *Spiritual Machines*. Instead of avoiding the issue of death, Kurzweil admits its modern value.

> Take death for example. A great deal of our effort goes into avoiding it. We make extraordinary efforts to delay it and often consider its intrusion a tragic event. Yet we'd find it hard to live without it. Death gives meaning to our lives. It gives importance and value to time. Time would become meaningless if there were too much of it. If death were indefinitely put off, the human psyche would end up, well, like the gambler [who goes to Hell where he never loses a bet] in *The Twilight Zone* episode. (2)

Kurzweil is under no illusions about the signification of death and he notes its importance in our modern subjectivity; however, the Singularity promises a refiguring of this mortality and consequently subjectivity. Therefore, should it not be embraced? Even if the public does not embrace it, Kurzweil leads the reader to understand that it is inevitable. In other words, Kurzweil rejects death's limiting purpose as contingent and promotes the Singularity as the usurper to death's role. The Singularity becomes that which gives meaning to our lives. The Singularity is a moment that, although it ushers in the unknown, is identifiable as an upcoming point of time. Thus, the Singularity is symptomatic of the postmodern. Specifically, the Singularity embodies what Fredric Jameson, an original classifier of the postmodern, identifies to be the postmodern's characteristic "look[ing] for breaks, for events rather than new worlds, for the telltale instant after which it is no longer the same" (*Postmodernism* ix). As Kurzweil identifies the Singularity as a replacement for death, he also unjustly situates death as a specific event within a timeline rather than the framework for a complex epistemology. The definable event is the location of transcendence rather than the true otherness of death, which is always already present while signifying absence. The question and criticism of limits is necessary because the limit is the foundation for ethics; it is "what the object *ought to* (although it never actually *can*) become" (Žižek, *For They* 110). The Singularity is an aggressive assault on the ethically productive limit of death.



The Death to Come

Death, as postmodern thinkers have written, is not a singular event but a product always already at play within communities. Boundaries, which inscribe, circumscribe, and contain, are always porous, definable by what they not only contain but also exclude. Thus, death contains the living, but in irreligious, inartistic postmodernity, what does it exclude? If one no longer moves to a different dimensional plane, immortality is not found in art, and transcendence is only found in transgressing mortality, then what happens to the dead? Resuscitation returns them to the living, so the only place for the dead is as ghosts within the community, as historic spectres that haunt the progressive present. The ghost is a reminder of the boundaries at play in existence and provides a framework for community (Nancy 13-14). The community coalesces around the absence death signifies. Unlike conventional critiques, death is not important because of the meaning it ascribes to an individual subject. Instead, the death of the subject creates a temporary centre for the development of the social, which shifts with corresponding deaths. The always already play of centres invokes the deconstructive work of Jacques Derrida and its putting into play of discourse. Death, as Derrida writes, is the location of otherness; it "is not only one absence among others; it speaks to us of absence itself by naming the most absent of absences" (*Work* 154). Thus, Kurzweil's attempt to replace death with the Singularity is conceptually unsuccessful because he is constructing an epistemological limit without the limit that defines limits, death.

Kurzweil attempts to supplant death and, in so doing, demonstrates the libertarian politics that the Singularity belies. As Jean-Luc Nancy writes in his

discussion on death and the community, "a thinking of the subject thwarts a thinking of community" (23) and there are few thoughts wholly centred on the subject than death. Kurzweil desires to preserve the self not beyond death but without death. But this absence of the most absent of absences is the presence of one absence too many. The Singularity is insufficient, conceptually, to provide a replacement for the delicately powerful foundation of death.

Death is the subjective singularity to come and an already present communal singularity. Unlike Kurzweil's formulation, the individual death is not a moment for technology to overcome but an essential marker of the social aspect of the personal. Derrida writes of the subjectivity death presents as "that which nobody else can undergo or confront in my place. My irreplaceability is therefore conferred, delivered, 'given,' one can say, by death. . . . It is from the site of death as the place of my irreplaceability, that is, of my singularity, that I feel called to responsibility. In this sense only a mortal can be responsible" (*Gift* 41). Thus, social responsibility that maintains community emerges from the mortality of the other that presents an impenetrable absence within the same. Death produces the otherness that founds "pure ethics, if there is any, . . . with the respectable dignity of the other as the absolute *unlike* . . . beyond all knowledge, all cognition and recognition" (Derrida, *Rogues* 60). The other's presence is insurmountable and necessary for the community's constitution and preservation.

Unlike the Singularity, which is a limit with a (temporal) limit, death is an interminable limit that founds a politics of the "to come". Derrida in his extended meditation on friendship and politics discusses democracy through the politics of the "to come":

> For democracy remains to come; this is its essence in so far as it remains: not only will it remain indefinitely perfectible, hence always insufficient and future, but, belonging to the time of the promise, it will always remain, in each of its future times, to come; even when there is democracy it never exists, it is never present, it remains the theme of a non-presentable concept. (*Politics* 306)

Democracy's presence is one of absence and, as such, its definition is that of something always to come. The Singularity presupposes a major restructuring of civilization, which, although its prophets never wholly admit, necessarily figures a death to come. This death to come therefore recreates the impossibility of the Singularity as a definable limit and positions it, alongside democracy, as definable through its lack of meaning. The Singularity of Vinge et al. positions this lack into a future not to come but to pass. Yet, within each of the Singularity technologies resides the specter of death and disaster. Therefore, the Singularity is an attempt by individuals working with technology to control the otherness and its promise of violence within technologies.

As emphasis on the Singularity undermines the specific technologies at play, each of the following chapters examines a particular technology through its cultural effects, most notably in literature. While art has lost its ritualistic use, it remains an effective lens to interact with material events. Furthermore, as my discussion of Virtual Reality argues, literature is the paradoxically effective art form, which makes a social critique and nevertheless remains aesthetically affective. Within each technology is an identifiable potential to restructure epistemologies and hearken the Singularity and a resistance to any such restructuring in the form of death and

disaster, which necessarily reifies epistemology within a postmodern subjectivity. A foundational technology for younger Singularity technologies and postmodernity in general is nuclear weapons.

Chapter 2

Nuclear Violence and the Myth of the Unthinkable

The year 2005 observed the pentennial review conference of the Nuclear Non-Proliferation Treaty. The unremarkable conference allowed the various governments involved to fully maintain their nuclear policies and to avoid promoting any changes. This policy is indicative of the technologies themselves. Nuclear weapons are a technology that must not be used and cannot progress. Technological progression involves laboratory testing and improvement of the technology's acknowledged purpose; the use of nuclear weapons is an exemplary complex system, which, according to Ralph Schroeder, refers to a system that either the laboratory or, as yet, a computer cannot simulate to any sufficient degree of accuracy (35-6). The purpose of nuclear weapons is destruction, which the armaments in the United States and Russia have been more than capable of since the first successful explosion of an atomic bomb on July 16, 1945. This perfection of purpose has led to the current world policy of deterrence guided by Mutually Assured Destruction (MAD).

The doctrine of non-use as the only use of nuclear weapons indicates the unthinkable aporia embodied by nuclear weapons. Even Aldous Huxley in *Brave New World Revisited*, his book of self-aggrandizement regarding the accuracy of his fictional predictions, admits that a "nuclear war will, of course, make nonsense of everybody's predictions" (2). It is no coincidence that the end of World War II marked the beginning of the new epistemic structure usually labelled the

postmodern. The end of the war, which introduced the realities of Hiroshima and Auschwitz, ushered in an epistemology of limits (Virilio and Lotringer 134). No longer are the limits of technological disaster and human capacity for inhumanity left to fiction's machinations and imaginations. The limits now have historical referents, which constrain discourse regarding the potential violences and evils of the future. I will not speak any more of the concentration camps here but it is important to understand that, in concert with Hiroshima, they had more responsibility for the postmodern condition than any other development in the past sixty years. As William Chaloupka phrases it in his book-length study of nuclearism, Hiroshima is "the name of a town, now metonymically extrapolated to stand for the human condition" (130). Therefore, despite the changes and supposed progression of current society, nuclear disaster reified one endpoint in 1945. The Singularity of nuclear weapons is past while creating a limit to come.

Deterrence is the ideal policy for this aporetic cultural moment. Out of the ashes of heroic modernist fires, deterrence crafts an anti-hero who engages in inactive action. "Deterrence . . . ", writes Jean Baudrillard, "is what causes something not to take place" (*Illusion* 17). Deterrence is regulation in the absence of regulation, which, at best, is poor policy. It prevents any specific discussion regarding use and development of the weapons and contributes to the myth of unthinkability that surrounds nuclear violence. While some regard MAD as "the safest international position that humans can realistically hope to achieve" (Bartter 217), others, of which Jonathan Schell and Helen Caldicott are the most prominent, regard it as entirely insufficient and that the only policy for nuclear weapons is abolition.

The pleas for abolition follow a general structure. First, a lengthy introduction about why the issue is still important appears to re-establish the importance of the topic to the reader. The nuclear issue, due to its mythical unthinkability, constantly elides thought and requires repetition. Second, a fear-mongering description of a nuclear holocaust replete with putrefying corpses, blighted landscapes, and violent survivors is a trope both Schell and Caldicott use; imaginative representations, while downplayed later by Schell, are essential to anti-nuclear arguments (Hungerford 55). A lengthy discussion of specific policies and their relative inefficacies follows until the author presents a straightforward model of abolition, and little to support realistic implementation. Most readers leave with a sense of terror and inadequacy. Aside from imaginative forays into the outcome of a nuclear war, most analysts eschew fiction in their discussion. While Schell admits the role of Conrad's *Heart of Darkness* for preparing the early-twentieth-century mind for the violence of World War II (Schell, "Nuclear" xvi) and claims that "only by descending into this hell in imagination now that we can hope to escape descending into it reality at some later time" (Schell, "Fate" 5), he does not further discuss art's ability to contribute to the world situation. Art's ability to engage the socio-political realm is the primary focus of my discussion of Virtual Reality in Chapter 6. Nevertheless, the role of art in the nuclear situation is unique. Unlike other speculative works, the texts of nuclear disaster must engage one notable restriction, that of Hiroshima, i.e. of actuality (Dowling 47). This situation presents nuclear texts with the unique opportunity to deal with an already-used Singularity technology.

"Are We Doomed to It . . ."

Walter M. Miller Jr.'s novel *A Canticle for Leibowitz* is an anomaly amongst the literature discussed in this thesis. As the Singularity is a growing concept intimately related to more recent technological developments, all other fictional texts discussed herein have been published after 1990. However, the nuclear situation is a unique forerunner to these technologies and, as such, requires a text from when nuclear violence was new and spectacular. Miller's *A Canticle*, published in 1959, marks the turning point in the postmodern episteme discussed by the British author J. G. Ballard:

> As the year 2000 approaches, releasing a rush of millennial hopes and fears, I take for granted that the future will once again play a dominant role in our lives. Sadly, at some point in the 1960s our sense of the future seemed to atrophy and die. Over-population and the threat of nuclear war, environmentalist concerns for our ravaged planet and unease at an increasingly wayward science together made everyone fearful of the future. . . . Yet I can remember when people throughout the world were intensely interested in the future, and convinced that it would change their lives for the better. In the years after the Second World War the future was the air that everyone breathed. . . . In many ways, we all became Americans, turning our backs on the past and confident that we could shape our world in any way wished, dream any dream and see it come to life. For the time the future was a better key to the present than was the past.

Ballard succinctly presents the rise of a Luddite zeitgeist and its close coupling with an increased interest in the future. Furthermore, he relates the notion of progress and technology to a specifically American mindset. America's rise to global dominance after World War II constructed the foundation for the exceedingly North American ideology of the Singularity. The limiting possibilities presented in World War II paradoxically liberated and restrained humanity. Nuclear weapons inverted the master-slave relationship between the natural and the human to the point where it was humanity's responsibility to protect the planet that had predominantly dictated human settlement and relations. Miller's novel provides a cautionary tale to this narrative of liberation and foregrounds the point where, as Ballard elegantly phrases it, "the future seems to atrophy and die."

A Canticle covers a time period of nearly 1200 years; the first section takes place around the year 2600 AD. Unlike the conventional space opera vision of a future replete with technological marvels and a human population that has expanded to the many reaches of the universe, the opening section "Fiat Homo" ("Let there be man") presents the reader with Brother Francis Gerard of Utah on a Lenten fast in the desert. One slowly learns that a nuclear holocaust has blighted the American landscape, for which Utah metonymically stands. The future, therefore, is no longer a frontier of potentiality but a desert filled with the "Immensurable Loneliness which was God" (9). As the novel progresses, so does society, although Miller presents this 'progress' with an irony that has become the norm in postmodern writing. The following two sections, each marking a progression of approximately 600 years, portray a seemingly inevitable development to another technological society that inevitably destroys itself. Operating in antagonism to the excitement towards the

future of which Ballard writes, Miller's novel appears especially bleak. Martha Bartter, in her survey of the atomic bomb in literature, typifies Miller's text as one of "existential shame. There is no hope for humanity. All human efforts, no matter how well intentioned, will inevitably lead to the next war" (147). This view arises from an immediate impression; however, upon a closer analysis, Miller's novel presents a more complicated construction of humanity and its relationship with its technologies. Humanity itself is not doomed, but rather it is its relation to its technologies that threatens its hope.

The threat nuclear weapons present is not an essentialized product of either the technology or an ethereal human nature. The most common metaphor used in relation to technological progress and scientific discoveries is that of Pandora's Box. Once the evils of the world are released from the box, it is impossible to put them back. While this metaphor is useful in questioning the initial opening of the box, it is erroneous for use in support of a libertarian ideology. The myth of the impossibility of uninvention is an ideological structure that promotes *laissez-faire* philosophies and prevents effective regulation and debate of technologies. Thus, a split develops between the discourses of the humanities and the sciences. Jonathan Schell, despite his work to oppose nuclear weapons, reinforces this split by placing science outside of politics and therefore ideology: "From the very first moments of the nuclear age, scientists have warned the world that it is in the nature of technology—as of all technology—to become universally available and therefore that, *in the absence of political will*, the world would tend to become nuclear armed" (Schell "Nuclear" xi, emphasis mine). Schell presents scientists as prophets separate from the technological developments they construct. This supports a myth of linear

scientific progression. Thus, when faced with the question of nuclear weapons, many are left repeating to some variation the poetry of the Harvard Nuclear Study Group who conclude, "the discovery of nuclear weapons, like the discovery of fire itself, lies behind us on the trajectory of history: it cannot be undone. . . . The atomic fire cannot be extinguished" (qtd. in MacKenzie 217). Of course, aside from being rhetorically delightful, equating atomic weapons with fire is nonsense. This conclusion constructs a simplistic view not only of science but also of "the trajectory of history." Fire does not require the substantial mining and technical infrastructure that nuclear weapons do. It is unlikely that a Stone Age Manhattan Project was integral in the development of rubbing sticks over dry grass. Prophesying the inertia of a mythical capital 't' Technology ignores the material reality of specific technologies and the responsibility of scientists as well as politicians and the broader human community.

As Donald MacKenzie eruditely argues through the use of specific examples, it is not only possible to uninvent nuclear weapons but also, due to the elaborate governmental infrastructure necessary for their development and dissemination, a straightforward technical process (22, 238-241). Before this act is truly possible, art must psychologically and morally prepare the populace for uninvention just as Schell claims *Heart of Darkness* prepared it for destruction. The first use of the word "uninvent" occurs contemporaneously with Miller's novel. The *Oxford English Dictionary* lists its earliest usage in 1962; notably, their second example refers to the impossibility of uninventing nuclear weapons ("un- *prefix*"). Without the concept of uninvention, the only political options available are violent use or deterrence. Guy Debord, whom I discuss in regards to nanotechnology, requires the

logic of impossible uninvention in his description of the society of the spectacle, which follows the dictum "*everything which can be done, must be done.* This means that every new instrument must be employed, whatever the cost" (*Comments* 79). If technology progresses linearly and inevitably, then the only option to preventing its use is, tautologically, to not use it. Before the uninvention of nuclear weapons is possible, the linear myth of technological development must be questioned, which is precisely what the structure of time in Miller's novel does.

A superficial reading of *A Canticle* presents one with the hypothesis that the historical model presented therein is circular. Therefore, one can place the whole complex of history into the maxim that history repeats itself. Miller encourages such a reading when he represents a character's meditation on the cyclical spirit of the city that "had grown slowly over an ancient ruin, as perhaps someday another city would grow over the ruin of this one" (115). Also, the third section contains a meditation by Abbot Dom Zerchi that Miller stylistically frames as a plea to the reader before shifting its sense to that of a prayer:

> Listen, are we helpless? Are we doomed to do it again and again and again? Have we no choice but to play the Phoenix in an unending sequence of rise and fall? Assyria, Babylon, Egypt, Greece, Carthage, Rome, the Empires of Charlemagne and the Turk. Ground to dust and plowed with salt. Spain, France, Britain, America—burned into the oblivion of the centuries. And again and again and again. *Are we doomed to it, Lord, chained to the pendulum of our own moral clockwork, helpless to halt its swing?* (245)

Many readers regard Miller's novel as an emphatically affirmative response to these textually-unanswered questions. However, as Foucault proposes in his review of Gilles Deleuze's *Difference and Repetition*, to repeat is not to cycle the same but to construct difference by exposing the failures, the points of otherness, within the same ("Theatrum" 358). Thus death produces the community through repetition. Every death is the social's return to its point of emergence. As the character of Thon Taddeo represents, Miller's construction of history is less cyclical than it is forgetful and therefore multiple, in stark opposition to the singular path proposed by Kurzweil and Vinge.

Twelve hundred years following the nuclear holocaust, in the timeline of the second section "Fiat Lux" ("Let there be light") the Newtonian character Thon Taddeo arrives at the Leibowitz abbey to study the manuscripts preserved by the monks. Like Isaac Newton and other pre-modern scientists, Taddeo is a man of multiple scientific pursuits rather than a specialized tool that currently must occur in the sciences. Taddeo's society praises him for his theoretical discoveries or rather, as the head of the abbey perceives them, recoveries (192). When one's society rises up from the ashes of a more advanced society, can there be any indication that the earlier society already accomplished one's discoveries, rooted in an unchanging physics? To prevent the personal humiliation such a reality proposes, Taddeo constructs a myth for himself, ironically using an unidentified science fiction text (probably Karel Čapek's tale of robot revolt *R.U.R.*) misidentified as factual for his tale's basis. Taddeo claims that his civilization descends from artificial life created by the "pre-Deluge race," or previous civilization (214). This construction returns originality to his discoveries; essentially, he imagines himself as a chimpanzee

discovering fire. Despite his discoveries and his ability to rationalize them as new, history forgets about him. In the third section, "Fiat Voluntas Tua" ("Let Thy will be done"), set over six hundred years after the second, Abbot Dom Zerchi refers to the legend of the Poet's eyeball, which tells of the encounter between the Poet, an unaccomplished drifter, and "the brilliant physical theorist—Zerchi could not remember whether the scientist had been Esser Shon or Pfardentrott" (280), who had actually been the forgotten Taddeo in an encounter Miller represents in the preceding section. Despite the fate of the man's memory in history, his discoveries remained important and useful, just as the mutants that populate the earth of *A Canticle* are the remainders and reminders of a nuclear heritage. Thus, Miller represents history not as a pure cycle, but rather as revolutionary, that is, simultaneously returning and evolving. This structure troubles the notion of linear progression because it is multi-dimensional and outside a specified direction and definition. This structure of history Miller represents imitates the complicated identity of religion in the novel, which is part of a humanity responsible for technological transcendence and disaster.

The most poignant thing forgotten in Miller's twelve-hundred-year history of the future is not the dangers of atomic weapons but the moralizing strictures of God. The use of religious symbolism is common within a novel of trauma (Granofsky 5). Discussion regarding Miller's novel quite often focuses on Miller's Catholicism, e.g. R. V. Young's "Catholic Science Fiction and the Comic Apocalypse: Walker Percy and Walter Miller"; however, this hermeneutical mistake forces an unnecessary model onto the book. While the presence and influence of a New Rome denotes a return to political power of the Catholic Church in the novel, commentaries that

equate Miller's fictional church with real Catholicism do not discuss that his is a post-apocalyptic church. The world has gone through its purification by fire and yet, as the character of the Wandering Jew, Benjamin, reminds the reader, the Second Coming has not happened. The Wandering Jew, who refused to aid Christ and as punishment had to wander the earth until judgement day, is the point that unites the three sections. Other tales and histories interact between the three sections, but the forgetfulness of history turns them into ghosts of the real. Benjamin's materiality and presence within each narrative provides an entry point to understanding *A Canticle*'s complicated Christian theology (Fried 362-3). The presence of the Wandering Jew is miraculous and affirms a Christian conception of God; however, his story is not biblical but began appearing in the Middle Ages ("Wandering Jew, in Legend"). Therefore, the theology of *A Canticle* involves an elaborate relationship between the *logos* of the Bible and the stories that emerge out of a lived religion, which structures post-Apocalyptic Catholicism as distinct from Miller's biographical Catholicism. If St. John's Revelations did not come to pass under a nuclear fire then new mythologies arise to accommodate this religious lack.

The new mythologies of *A Canticle for Leibowitz*, similar to the technological rise Miller lived through, are those of science and technology. Paul Virilio, who in his vehement critiques of technologies, writes of their religiosity by "negat[ing] the transcendental God in order to invent the machine-god. However, these two gods raise similar questions" (qtd. in Kelly 24). The presence of God or gods allows for a displacement of one's anxieties and responsibilities. While the monks criticize Taddeo for replacing religion with science, the most effective argument does not come from one of the religious acolytes, but rather from the

secular character of the Poet. Miller frames the confrontation between religion and science as an oppositional dogmatic violence. The Poet, conversely, is a ludic, artistic figure who avoids the rigid creeds of either oppositional camp and, like a Shakespearean fool, is able to criticize both while drawing the ire of neither. The Poet embodies the postmodern figure who suffers from what psychoanalyst and literary theorist Julia Kristeva terms the "new maladies of the soul." These maladies, according to Kristeva, emerge from an inability to engage in psychic representation:

> If drugs do not take over your life, your wounds are 'healed' with images, and before you can speak about your states of the soul, you drown them in the world of mass media. The image has an extraordinary power to harness your anxieties and desires, to take on their intensity and to suspend their meaning. It works by itself. As a result, the psychic life of modern individuals wavers between somatic symptoms (getting sick and going to the hospital) and the visual depiction of their desires (daydreaming in front of the TV). In such a situation, psychic life is blocked, inhibited, and destroyed. (*New Maladies* 8)

The current maladies, whose multiple facets are only restricted by the size of the population, afflict the modern individual who exists within a disruptive rhizomatic space. The postmodern figure, torn between two gods, becomes a creature of borders and connections, completely separate from a stable representational mythic structure that the transcendental Other signifies. In a contained religious environment, this structure provides simple subject positions that have an identifiable depth and presence; separate from the Other, individuals construct

multiple others that rely more on an ethics of relationship. One possible construction is a fervent misidentification with a false Other, such as occurs in fundamentalism, which, Kristeva notes, works as well as drugs and images in the production of an "artificial soul" (*New Maladies* 7). Despite the negativity the artificial/natural split promotes, an artificial soul is structurally identical to a real psyche. It implies a presence of absence rather than an *a priori* presence; however, this absence still provides a centrality for subjectivity. In *A Canticle*, Miller maps the second death of God, after the first one observed by Friedrich Nietzsche, but presents the rise of a specific humanism in the spaceship of Church authorities that leaves to restart civilization on another planet, which "isn't hope for Earth, but hope for the soul and substance of Man somewhere" (264).

Miller's humanism is an attempt to construct a morality under the threat of nuclear holocaust. This manoeuvre demonstrates the appeal of simple, reified values, such as an inevitable Singularity to pass, rather than a complex community to come. Furthermore, as Cornel West writes in his aptly-titled analysis of American Pragmatism, *The American Evasion of Philosophy*, "[i]n this world-weary period of pervasive cynicisms, nihilisms, terrorisms, and possible [nuclear] extermination, there is a longing for norms and values that can make a difference" (4). Miller's novel reintroduces the problem of the soul in the background of the Singularity's promise to remove death; as Schell reminds his readers, extinction is beyond death as "the death of death" ("Fate" 119). Unfortunately, the norms and values Schell and West propose are stale and totalitarian. They rely on a fixed notion of the human upon which writers opposing genetics also depend. Miller, however, never separates his humanity from the technology, as the spaceship

necessary for humanity's survival and the novel's final scene of a starving shark represent. The shark, a subtle representation of the beautiful dangers of nature, is part of a dying world with no possibility for escape, whereas the space travellers, thanks to technology developed in concordance with nuclear weapons, have a chance for renewal. Miller's novel represents humanity's ability to survive itself dependent upon a certain measure of posthumanity arrived at through both religion and technology.

Thinking through Nukes

The avoidance of exploring the posthuman is a property of the postmodern itself. The nuclear, metonym and patrician for Singularity technologies, operates as an interruption, which is an unthinkable and unknowable location in which both the self and civilization dissipate. Unlike Derrida's construction of fluid centres, which structurally function as temporary centres in and of themselves, the nuclear marks a point in which the centre paradoxically shatters through reification. Deterrence is a method to avoid addressing the point at hand. Like democracy, deterrence is without meaning (Norris and Whitehouse 293); however, unlike democracy, deterrence cannot use a politics of the "to come" as it must be always already present. Its continued presence proliferates the threat of violence because it carries the promise of violence to pass, just as the Singularity promises a point to pass. When the London Charter of August 8, 1945 provided that the Nuremberg Trials would deal only with the loser's crimes, Hiroshima (again, the postmodern metonym), the crime of a victor became that which one does not address. However,

this negativity does not signify an absence but "an inert, obscene, revolting *presence*" (Žižek, "Obscene" 44). Hiroshima exists as an epistemological limit due to its identity as an abstraction.

One cannot discount the importance of the rise of the spectacular image on the dissolution of the nuclear presence. A demonstration of this effect is in the adaptation of *The English Patient* from novel to film. The climactic point of the novel occurs when Kip listens to a report of the bombings of Hiroshima and Nagasaki over the radio. The report signifies the conflation of time in telecommunications: three days separate the bombings, but they emerge as a singular entity in the news report. Kip, or Kirpal Singh once the atomic bomb fixes his racial identity, rages at the news; he moves to kill the eponymous English patient, Almásy, who is not English, to repay global violence with the personal. As the nurse Hana writes, using Hiroshima and Nagasaki to deal with her own personal grief, "From now on I believe the personal will forever be at war with the public. If we can rationalize this we can rationalize anything" (292). This balance between the personal and the public shifts with the novel's translation into film. Once the narrative moves to the more personal medium of film, the political dissipates. Instead of the nuclear violence triggering Kip's rage, the death of his companion Hardy, a lesser event in the novel, results in his leaving the villa in the film, whereas a different character threatens Almásy. Ondaatje and cinematographer Walter Murch discuss the expediency of the choice to change the climactic scene; the film medium is less able to shift smoothly between the personal and the political (Ondaatje, *Conversations* 213-4). Concluding from this axiom and the corresponding removal of the nuclear in the film, nuclear violence is

incommensurable with the personal. Hence the nuclear is unthinkable from an identifiable subject position.

The unthinkability of nuclear culture comes from the unthinkability of the technology itself. Nuclear weapons are not testable in a restrained laboratory setting and, even when outside tests were acceptable, empirical measurements were difficult because the presence of a sensor undermines the delicate structure of the bomb, making it unable to detonate (MacKenzie 230). The weapon is measurable only in a qualitative sense. Quantitative discussions, especially describing the megatonnage of a particular bomb or weapon capacity of a nation, often convert to a nonsensical qualitative relationship to Hiroshima: for example, one megaton is equivalent to 70 Hiroshimas. Of course, postmodern society has yet to comprehend one Hiroshima, so speaking of it in multiples is an absurdity. Even Thomas Pynchon, whose novels write at the limits of technological possibility, cannot conceive of "any countercritter Bad and Big enough" to compare with nuclear weapons (par. 23). Furthermore, with the restraint of nuclear discourse following the Cold War, using the moment of history as a unit of measurement devalues and silences that moment of history.

How then do we speak for Hiroshima? As W. G. Sebald notes in his haunting essay on the Dresden bombings, which cites Kenzaburo Oe's work about Hiroshima, the right of the victims of mass destruction to silence is inviolable (89). Perhaps the only way of thinking disaster is through disaster? But, while speaking *for* Hiroshima and the victims of atrocities is impossible, speaking *of* them is necessary. Yet, the silence surrounding nuclear weapons deafens: the more that is not said, the less is heard. This tautology is necessary in the wake of the recent nuclear non-proliferation non-discussion. The silence of the nuclear constructs the

state of perpetual destruction that proliferates in the postmodern psyche. As Foucault identifies in his landmark study of sexuality, the repression of an object results in the heterogeneous proliferation of that object as "a dispersion of centers from which discourses emanate[], a diversification of their forms, and the complex deployment of the network connecting them" (*History* 34). Insidious technologies of violence, such as chemical and biological warfare, are repressed versions of nuclear bombs, promising a tempered destruction beneath the silence of "the destroyer of worlds" as Robert Oppenheimer remarked at the Trinity test (qtd. in Hijiya 123). The other Singularity technologies are symptomatic proliferations of the nuclear. The drive to the Singularity is ultimately the drive to escape death by extinction, an event that nuclear weapons made tangible.

Similar to the Singularity, the unthinkability of the nuclear is part of a myth that harms the human by ignoring a more profound otherness; however, unlike the Singularity, nuclear unthinkability intimately relates to death and thereby provokes efforts towards thinkability. Martin Amis, the British novelist, attempts to directly confront nuclear unthinkability. Amis wrote his confrontational essay in the mid-eighties, the point when the Cold War seemed as though it would continue forever and the Reagan administration no longer regarded MAD as the only possible outcome of nuclear war (Derrida, "No Apocalypse" 25). The essay concerns the lack of fictional explorations of nuclear disaster; Amis feels that the previous generation of novelists, who were alive when the bomb destroyed Hiroshima and Nagasaki, ignored this dangerous issue. Nuclear war provides an unthinkable limit "because the eventuality it posits is one in which all human contexts would have already vanished" (Amis 8). But, Amis titles his essay and manifesto "Thinkability"

because, as an author, Amis understands the trouble of imagining the impossible and, in the case of nuclear weapons, the imperative of doing so. For Amis thought is not in the form of political legislation, which he distrusts in the Reagan-Thatcher era, or a polemical non-fiction text, an area Schell's text suitably fills according to Amis (5). Amis begins his understanding of nuclear weapons from a literary vantage. Literature potentially provides a way to circumscribe the double bind of nuclear weapons because "[a]lthough we don't know what to do about nuclear weapons, or how to live without nuclear weapons, we are slowly learning how to write about them" (Amis 3). While Amis rightly identifies literature as a tool for exploration of a not necessarily unthinkable notion, his claim that we are just learning to write about them is mistaken. As the community cannot do anything without death, so too, after Hiroshima/Nagasaki, one cannot help but write the nuclear.

Derrida's incisive essay on nuclear criticism, also written in the eighties, was an attempt to speak of and to nuclear weapons. Yet with clever Derridean tactics, the "non-event" of the nuclear war ("No Apocalypse" 23) becomes all that one can address. The nuclear is a reconstruction of the limit and the event, and therefore is always already approached, especially by literature (Derrida, "No Apocalypse" 26-7); however, the possibility of a great epic dealing particularly with nuclear destruction is slim. Sebald, in his book *On the Natural History of Destruction*, writes of how destruction in Germany during World War II inhibits the composition of a "great German epic of the wartime and postwar periods" (viii). Amis admits that the stories that his essay introduces do not consciously addressing nuclear weapons, but rather the weapons could not be other than the background of his tales

(19). The dissolution of the nuclear in *The English Patient*'s transition from book to film is simply the further trend of nuclear holocaust becoming an omnipresent, unseen background. Derrida notes that we can do nothing but speak of nuclear war because the actual occurrence of nuclear war is the limit of discourse. As the political weight of nuclear weapons shifts and they become reclassified as Weapons of Mass Destruction (WMD), the cultural discourse represses their effects and realities and, in doing so, results in their proliferation.

Nuclear weapons as a concept, like sexuality in Foucault's analysis, promotes "heterogeneities" (*History* 37) and thus becomes omnipresent while disappearing into unthinkability. It is little surprise that the proliferation of 'transcendent' technologies in recent years have a nuclear lineage. Paul N. Edwards in his book *The Closed World* rightly traces cyberspace to the limit of nuclear war. This equation is often erroneously seen as the development of ARPAnet in response to the launching of the Russian satellite *Sputnik*. Instead, cyberspace emerges out of the closed world epistemology that the reified limit of Hiroshima/Nagasaki constructs. The closed world is contained and self-referential, resulting in the proliferation of systems, "organized unit[s] composed of subsystems and integrated into supersystems" (Edwards 340). Control over these systems, which occurs metonymically through computers (Chaloupka 61), is the attempt to overcome one's inability to control the nuclear. The unthinkability and disappearance of nuclear weapons results in the broken policy of deterrence, whose discussion this chapter began.

Derrida's manoeuvre to make the nuclear always already speaking opposes the logic of deterrence. Deterrence, rather than a stable policy for dealing with the unthinkable, indicates of a dangerous political situation.

> The perfection of a totalitarian system lies not in its power to inflict punishments on a stubbornly resisting minority but in the means it possesses to marginalize that minority to the point where their ideas become simply inconceivable to the right-thinking mass of citizens. (Norris and Whitehouse 294)

Thus, it is the responsibility of the ethical writer and scholar to intervene in the construction of unthinkability surrounding nuclear weapons by vocally thinking not only nuclear disaster, but also the disaster latent within the technological objects used to avoid thinking of the nuclear. Thus, one must question the control other Singularity technologies permit, especially the widely proliferating telecommunications network.

Chapter 3

The Dissipation of Disaster

The obvious violence of nuclear weapons marks a rupture in Singularity technologies. With the nuclear acting as a reified limit of destruction, writers such as Vinge and Kurzweil write of the Singularity coming through supposedly non-violent technologies, such as telecommunications networks, nanotechnology, and genetic engineering. These three technologies follow a progression away from the spectacular promise of nuclear weapons and space programs towards the liberation from subjectivity into an immortal transcendent state. The logic of the Internet, whose role in archiving knowledge in a nuclear war one must remember, promises a pathway to escape the otherness of death; contrarily, as the fictional explorations below argue, the network always already threatens death and disaster and as such provides no path for liberation.

"Eat It or Throw It Away"

Pat Cadigan's *Synners* adopts and manipulates the cyberpunk tropes that mark its genre. The opening discussion between two otherwise marginal characters, Jones and Gator, foreshadows the novel's playfulness towards conventions. Jones firmly announces, in the story's opening line "I'm going to die" (1). The potential narrative branches and connections proliferate from this opaque opening sentence. Yet, while the possibilities are multiple, they are also singular in their direction.

Narratives that end in death dictate a certain irreversibility of action. The importance of death as the "teacher in evolution" (Kelly, *Out of Control* 303) and the point where the other and the self converge fixes a narrative's trajectory towards a specific completion. Cadigan undermines this trajectory through Gator's response to Jones, "What, again?" (1) With two words, the novel constructs a world of notable alterity. Death is no longer an aporetic event, which prefigures the new construction of individuality that supposedly exists beyond the Singularity.

The otherness that Cadigan presents within *Synners* emerges from the logic of the networked system. Cadigan, as a skilful science fiction writer, does not imagine so much as she extrapolates. This distinction does not construct some sort of hierarchy among the vague genres of twentieth-century literature, but positions *Synners* within a specific heritage. Works generally classified as science fiction not only speculate, but also prognosticate. While the former identifies the clear vision that fiction positions onto its subject, the latter presents a direction and spirituality to the vision. As the case of William Gibson's "cyberspace" demonstrates, the science-fiction writer risks becoming seer and prophet in the hands of indelicate readers. Gibson's definition of cyberspace as a "consensual hallucination" in *Neuromancer* (51) is often read out of context. The phrase occurs as an authoritative, encyclopaedic definition in the novel, whose characters use cyberspace in a very different way than the phrase "consensual hallucination" supports. The line between philosophy and fiction is always already blurry but never more so than in science-fiction texts. While several discussions throughout this thesis use fictional texts to interrogate technological developments and vice versa, the interrogation never fully engages due to the incompatible aesthetics in operation. Both technologies and art

are made objects whose internal structures promote and provoke a useful separation and otherness with each other. This distance benefits art's critique of other cultural structures because art's autonomy prevents its dissolution into complicity. Therefore, while empiricists with no love for the imagination criticize the scientific impossibility of *Synners*' technologies, Cadigan's writing operates in opposition to and alongside with current technologies.

This opposition to and alongside with is the oft-forgotten logic of networked systems that *Synners* presents and, in doing so, attempts to preserve. This activity is little more than the preservation of alterity and, as such, an act of great importance in a globalized culture. Instead of engaging the dissolution of otherness, the heirs of McLuhan attempt to reinsert the human into the machinic: "It is really *people* who connect through networks, not just their machines" (de Kerckhove 163). This rhetoric further dissolves otherness by showing humans and machines as equivalent and interchangeable. The place of humans in the machinic in the narrative of *Synners* is a secondary issue as, despite the character of Visual Mark who seeks separation from his body into the machine, Cadigan's novel confronts the reader with the powerful corporealities of humans and machines intimately related. Jones' body literally litters several areas of the text through his repetitious deaths; the young computer hacker Sam uses her own body as a power source for her computer, a trope made famous in the Wachowskis' *Matrix* trilogy; the climax of the novel presents people bleeding out of their eyes, dying in connection to the equally omnipresent machines. As discussed below, disaster reaffirms the role of death and individuality that the opening scene of the novel undermines. The opposition to current technologies is the human's role as a node. Unlike the technolibertarian

discourse that coupled with the rise of the Internet in the last years of the twentieth century and continues, albeit subdued, today, the network proposes a subjectivity that is neither libertarian nor communal.

The one is always of the multiple, alongside with, and never reincorporated into a one, in opposition to. Thus, *The Daily You* of *Synners* is a more accurate title for a networked society's news service than *The Daily Me* that technoguru Nicholas Negroponte predicts (qtd. in Franzen 168). While Negroponte's vision promotes a solipsism that is certainly emerging in reality (Bazerman 146), Cadigan's proposed title emphasizes that the other always interpellates the networked self. Unlike in corporeal situations, where the self's body is clearly demarcated, the self-online is vague and always necessarily in connection. Thus, when novelist Franzen laments the disappearance of solitude, he is lamenting the loss of non-networked space and the indivisible subject. Although he never specifically admits it, Franzen mourns the loss of the Cartesian *cogito*, to whom all of reality is a potential illusion but the self. This loss emerges out of the death of God in Hiroshima and Nagasaki, which prefigures the new maladies of the soul diagnosed by Kristeva.

The postmodern subjects in *Synners* accept their meaningless, almost animalistic relation with others. As one phrase that recurs throughout the novel emphasizes, "[i]f you can't fuck it and it doesn't dance, eat it or throw it away. That's the fucking order of the universe" (141). The subtext to this statement is that the computer and, in the context of the novel, the *cogito* cannot be fucked or eaten and does not dance, and, therefore, must be thrown away. Thus, the individuality of a synner, that is one who connects and creates within the network, is not linked to the arbitrary boundaries of the body but abstracts into the particular person's activity

as a node through which information routes. Within a network, there is no such entity as the individual into whom the system divides and is singularly indivisible. The network, functioning as an ecological web, requires all its parts interrelating in a complex system that supposedly prevents disaster and preserves a new form of subject.

The Consolidation of Class

The network of capitalism creates a difficult position for otherness in subjectivity. Despite its appearances of producing a multiple network that preserves and exchanges difference, the act of exchange shows the unifying character of globalization's flow. Michael Hardt and Antonio Negri argue in their book *Empire* that this unity is a position for Marxist revolution because of the unthinkability of an antithetical position to the globalized network. The supposedly new system Hardt and Negri propose comes from Deleuze's philosophy in such an unfiltered state that it is susceptible to the same criticism. The "explosion of multitudes" proliferates and multiplies until, as a philosophy and social structure, it becomes indistinguishable from an "all-encompassing One" (Žižek, *For They* xxvi). Nevertheless, they attempt to identify a new subject position within the capitalist techno-network that currently structures major economic relations.

The vastness of the modern telecommunications structures presents an enticing space for new Singularity subjectivities to emerge. More optimistic pundits see the Internet as the ultimate step for a pure and just democracy, which is anarchy. The Internet not only "will be the most egalitarian revolution in the history of

humankind" (Cohen 126) but also "is, as its users are proud to boast, the largest functioning anarchy in the world" (Kelly, *Out of Control* 464). The belief that a new technology provides a space for a new Eden is not new. As Harvey Jassem reminds his readers, similar utopian rhetoric emerged with the introduction of cable television (39). Technological connection provokes a utopianism that proclaims that, even though the *cogito* dissolves, humanity will be freed into an anarchic state of nature. This conclusion denies the class restructuring that necessarily follows technological restructuring. As Jonathan Franzen eruditely notes,

> The ease with which jobs and capital and digital signals now cross national boundaries is matched by the mobility of the new informational elite, those lucky symbolic analysts who, like many a ruling class before them, are finding that they have more in common with the elect of other countries than with the preterite of their own. (68)

Thus, no full egalitarian unification into blissful anarchy is underway at all. Gibson's novel *Pattern Recognition* unsubtly criticizes globalization and the modern corporate structure through the fast friendship between Hubert Bigend, the advertising company CEO, and Andrei Volkov, a Russian industrialist with implicit criminal connections; as one character describes their business conversation, "[i]t was like watching spiders mate" (330). Through the medium of cyberspace, these individuals that occupy a specific class in their respective countries connect and consolidate their power positions. Thus, "[t]he difference" that is other nations (Gibson, *Pattern Recognition* 105) disappears beneath the flow of capital and information. Instead of providing an avenue for restructuring society into a new area for new subjectivities, cyberspace becomes "a toolkit for reconfiguring

consciousness in order to permit things to go on much in the same way" (Allucquère Rosanne Stone qtd. in de Kerckhove 174). The otherness within the ethereal relations of networked culture remains remarkably stable while engaging the constant refiguration of the physical relations. Cayce, in Gibson's *Pattern Recognition*, has a career devoted to maintaining this stability. As a coolhunter, she tracks the flows of individualistic culture and connects it to the mass corporate structure of marketing that stabilizes the abstraction that is cool. This stabilization preserves social structures.

The fact that this sober re-evaluation of cyberspace comes from the author who coined the term is not insignificant. *Pattern Recognition* distances Gibson's *oeuvre* from the broader cyberpunk milieu wherein he began. While it is questionable that his earlier novels beatify technology in the way that some believe, there is no indication that the World Wide Web empowers the individual in this novel. In fact, much of the danger Cayce faces is due to a hypothesis she posts on an online forum. Gibson portrays the network as a dangerous place, where information levels out and hypotheses become synonymous with accusations. The subject, whose existence depends upon the information it sends and receives, restructures within the threats of this global community.

The globalized subject is not in the process of dissolving but of restructuring. This understanding is especially important as this thesis shifts from the spectacular technologies of nuclear weapons and global telecommunications to the invisible technologies of nanoscience and genetic engineering. Fukuyama, Baudrillard and Foucault are among the predominantly male group of thinkers who regularly celebrate and lament the death of the subject. Similarly, the Singularity is a concept

rooted within Western male researchers and theorists. Haraway rightly notes that this subjectivity, which historically is sexed male and raced white, supposedly disappears "at just the moment when raced/sexed/colonized speakers begin 'for the first time,' to claim, that is, with an 'originary' authority, to represent themselves in institutionalized publishing practices and other kinds of self-constituting practice" ("Ecce Homo" 57). Thus, instead of reconfiguring the model of independent subjectivity to account for the presence of these new, multiple authorities, the common practice has been to declare the subject's disappearance into the network of postmodernity. Gibson's protagonist intercedes with this proposition due to her position within the work of Gibson the cyberpunk novelist.

Gibson self-reflexively realizes that critics will situate this novel and its modern setting within his science-fiction work. He promotes such comparisons through the homonymous names of Cayce with the protagonist of his most famous novel *Neuromancer* (*Pattern Recognition*, 31). Whereas Case desires to be free of his body and *Neuromancer* can be read, however unjustly, as a techno-libertarian fairy tale, Cayce does Pilates for a greater awareness of her body and *Pattern Recognition* undermines the cyberpunk discourse that figures cyberspace as a utopia. The differences between the names, in spelling and sexual signification that Jameson briefly glosses in his review of *Pattern Recognition* ("Fear and Loathing" 114), primarily signify a multiple shift in subjectivity. Gibson's novel attempts to understand what emerges from the corpse of the Cartesian *cogito* rather than focusing on the loss in and of itself, which "hangs on the presence of a subject in a postmodern hyperspace where it *feels* that old-fashioned thing: a loss of identity. The postmodern, as an inversion of the modern, repeats its discourse" (Spivak 320).

Absence simply reinscribes presence in this instance and, as such, the claims of a disappearing subject enable the protection and reification of that predominantly male, predominantly white subject.

Cayce's loss of coolhunting ability at the end of the novel indicates a subjectivity opposed to the postmodern network. The trauma of death constructs a presence to her identity outside of but alongside with the network, as opposed to the coolhunter's responsibility to measure flows within the network. While the death of the subject, in Singularity discourse, prefigures a new transcendent subjectivity, the catastrophe of death actually calls forth the presence of community. At the opening of the novel, Cayce wakes alone to a feeling of jet lag, the physiological disease of a networked culture (1). She is part of the network and feels a sense of soul-lag. This "state of feeling . . . is endemic to postmodern society: a vague but perpetual sense of dislocation" (Shaviro par. 5). The conclusion of the novel presents the absence through death that refigures her presence in the network and her soul is able to catch up to her in the figure of Parkaboy/Peter, whose identity also shifts from virtual to physical. The final sentence of the novel—"She kisses his back and falls asleep" (356)—emphasizes physical community and the act of sleeping, which is a removal from the conscious network. The Singularity prefigured by the network fails because of the catastrophe inherent within the technology.

The Last Message

The violent catastrophe in *Synners* occurs in opposition to the purpose of the Internet, although it naturally emerges from the trope of connection. Despite the

logic of the network attempting to eschew death, death reinserts itself into discourse through violent catastrophe. In the novel the character Visual Mark situates his consciousness online and leaves his body as best as he is able. Using the tragic trope of punishing *hubris*, Cadigan's narrative requires that the body exacts revenge upon the prideful mind; Mark's "meat" sends its "last message," death, in the form of a stroke (326) that follows him across the network and kills any other minds it contacts. While for Mark death becomes another message, another input of information, for those who experience the stroke, death is an instant physical reality.

Neal Stephenson's *Snow Crash*, appearing nine years after Cadigan's novel, also deals with transsubstantive viruses that damage computers and minds; the contagious stroke of *Synners* is more instructive for two reasons. First, while Snow Crash, the infectious agent in Stephenson's tale, destroys the mind, its action on the body is sterile; the disaster of Cadigan's narrative emphasizes the conjoined suffering of the mind and the body. Second, Mark's stroke destroys the network not by erasing hard drives or ruining the infrastructure but by making the virtual space inhospitable for human connection. The notion of destruction through the removal of access emphasizes the uniqueness of the Internet and interconnected communications technologies. Whereas nuclear weapons and nanotechnology can hypothetically attain a measure of autonomy, communications networks require communicators in order to exist. This requirement allows for the system's robust flexibility that is necessary due to the Internet's purpose as a tool for sharing and storing information. But this relation also means that more than one person is necessary for the operation of the system and, as the parent concerned about their children accessing pornography would corroborate, "Hell is—other people" (Sartre

61).[3] The violence depicted in *Synners* inverts the common science fiction anxiety of the dangerous machine and the beatific human. In Cadigan's novel, computers don't kill people. People kill people. They just do it through computers. The medium provides a unique way for what is usually a solitary experience, a stroke, to spread to other individuals. The logic of the network does not modify the stroke because "in the system a thing was what it was, or it was not anymore, and this thing did not alter in nature" (Cadigan 330). Thus, McLuhan's conflation of the medium with the message attains more nuances than it is often given. As easily as one writes, "The medium is the message," one may also write "The message is the medium." The message of the stroke is one not only of death but also of the community surrounding death; therefore, the medium becomes a communicator of death, of the thing "in the system."

The dangerous element of a broad web of connections is its restructuring of the interaction between presence and absence. Death is, to repeat, "the most absent of absences" that indicates absence itself (Derrida, *Work* 154). Mark's absence, however, becomes simultaneously present to those connected with the network. Thus, despite the Internet's role to prevent an absence of knowledge, it propagates that absence through its character of simultaneous presence. Critics must be wary of valorizing the decentralization of cyberculture as Pierre Lévy does: "Eventually there will be only a single computer, but it will be impossible to locate its boundaries or determine its contour. Its center will be everywhere, and its circumference

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[3] This quote is drastically and unfairly removed from its context. Jean-Paul Sartre positions this quotation in a play titled *No Exit*, which depicts a decentralized hell where the inhabitants torture each other through merely existing. Sartre cleverly creates a communal hell without mirrors, so not only the interpersonal relations but also the lack of available solitude that creates the torment for its inhabitants. The network, with its promise of perpetual community, creates a modern foundation for Sartre's hell.

nowhere" (*Cyberculture* 26). As Gayatri Spivak sardonically notes, the overvaluation of decentralization emerges from a limited reading of Derrida and other poststructuralist theorists.[4] Yet, even the most radical of critical theorists such as Gilles Deleuze and Félix Guattari restrain from fully embracing the freedom of pure, deterritorialized communication: "We do not lack communication. On the contrary, we have too much of it. We lack creation. *We lack resistance to the present*" (*What is Philosophy?* 108). Communication technologies are technologies of the always already present, hence why *Synners* diagnoses information to be without a life cycle: "*Information can neither be created nor destroyed—it's accessible or it's inaccessible, but it* is" (382). There is no absence in or of information; as N. Katherine Hayles elucidates, even chaos, supposedly the absence of information, actually carries and transmits information (102-3). Thus, communication lacks the conventional resistance to presence, which is absence. Mark's transmitted death is a narrative attempt to reintroduce this resistance into the technology, which marks Cadigan's distinction from her cyberpunk heritage. Instead of regarding the network as liberating, Cadigan identifies a fundamental flaw within the decentralized presence-making machine. "Every technology has its original sin" (435), claims the novel. Cadigan then presents disaster predetermined by the technology because, although the network does not follow a creation-destruction paradigm, life does and, with its corresponding death, life institutes the deferred absence into the network.

Cadigan does not present a wholly apocalyptic narrative. Another option of mitigating the necessary absence from this network of presence emerges in the

[4] "It is my suspicion that Anglo-U.S. critics . . . insist so specifically on the de-centering and on a narrative of de-centering because the first and last Derrida they read *carefully* was 'Structure, Sign, and Play' and the first chapter of *Of Grammatology*" (Spivak 322)

technological restraint of one of the multiple protagonists at the novel's conclusion. "*Appropriate technology*, he told himself, *and nothing more.* Words to live by. Better than *killed your taste for it*" (431). In this instance, appropriate technology does not refer to what early globalization philosophers preferred, which, according to Don Ihde, were "small and simple technologies for (ignorant, untrained, and unready) Third World peoples" (117-8). An appropriate technology does not refer to any technology that is *a priori* beneficial and good. Instead, as in Miller's *A Canticle*, the appropriateness of a technology refers to the personal and social ability to take responsibility for the employment or lack thereof of the respective technology. I do not seek to reinscribe narratives of control over the machines, but rather the identification and understanding of a more complex relationship wherein both technologies and humans adopt responsibility for the uses of each other.

The Disappearing Spectacle

> So what about the phrase which reverberates everywhere: "Nothing will ever be the same after September 11?" Significantly, this phrase is never further elaborated—it is just an empty gesture of saying something "deep" without really knowing what we want to say. So our first reaction to it should be: Really? What if, precisely, nothing epochal happened on September 11? (Žižek, *Welcome* 46-7)

The responsibilities in the interrelation between technology and the human include both use and perception. With the modern scientific epistemological privileging of the visual, sight is a tool that society must employ towards the machinery that it uses

to experience the world. As the modern power structure shifts from a tyrannical hierarchy to a culture of surveillance, conventional opposition to this trend is the attempt to reinscribe the hierarchical structure—only we must be sure that we make the right hierarchy this time around.[5] Another response is that of anarchism, which has yet to demonstrate itself as a viable political system. What these desired shifts ignore is the entrenchment of the visual and surveillance in the Western construction of the universe. Steve Mann, the self-proclaimed cyborg who understands the role of the visual in modern technologies, does himself and his disciples a disservice by misunderstanding both Foucault and the nature of surveillance society. Mann positions agency within a specific seeing individual, a *Daily Me*, whose actions solidly remain grounded on an individual identity: "it is up to me how and what I see, how and what I choose to focus on or exclude" (Mann 3). This view carries over into his misunderstanding of the Panopticon as a singular, corporate viewer that actively views and searches. The top-down voyeurism of Mann's nightmares positions him in an untenable resistant position wherein he accosts managers and clerks as cogs in a larger aggressive machine.

What Mann fails to account for is the eye's changing focus. No longer are cameras behind opaque domes doing the important watching; now, discount cards and IP addresses are our individual traces that databases watch. As Susan Crawford of the Center for Democracy and Technology notes, "there will be lots of surveillance, but I don't see it being turned over to government authorities. Instead, it will be used to market to us in ever-more-personalized ways" (qtd. in Keizer). While Crawford claims the government will not be the primary surveyor, she does

[5] Exemplary of this tendency is Anis Shivani's recent article in the anti-advertising magazine (a contradiction in itself) *Adbusters*, wherein he claims that a new morality must supplant the moral relativism of postmodernism and deconstruction in academia.

not position a subject in its place. Who will market to us? Who will be using all this data that watching cannot help but accumulate? The answer is that we will, or as many of us as have access to the datasets. With the restructuring of the visual comes a new form of catastrophe that *Pattern Recognition* deftly portrays through avoiding its portrayal.

There are two major technological disasters in the novel, both of which precede the timeline of the story. Thus, these disasters return and revolve around the current character network, giving *Pattern Recognition* a post-apocalyptic sense. Yet, the apocalypses are multiple and personal, despite and because of their inclusion within a broader geopolitical network. The disasters of a network always occur at the nodes. In *Synners* the disaster was the network and the nodes had to either be removed or die. Therefore, while the Internet protects governmental information in the event of a devastating attack, the network increases the importance of its respective nodes rather than decreasing their strategic importance. This conclusion supports Baudrillard's claim that the "more concentrated the system becomes globally, ultimately forming one single network, the more it becomes vulnerable at a single point" (*Spirit* 8). The first catastrophe is that of the bombing that kills Nora and Stella's parents and traumatizes Nora, instigating her production of the online video clips that create a community of which Cayce is a member. The destruction was due to infighting amongst the Russian underworld, a criminal element that, as mentioned above, relates well with the capitalism of advertising. Nora's art is film, the framing of images from a surveillance camera into an indeterminate narrative (Gibson, *Pattern Recognition* 289). She moves her disaster into a visual mode for a community to form and interact. The community does not

know the author or the eye of the film and must rely on the operation of their own vision to discern meaning within the fragments of film that Nora's diffuse distribution method provides. With this erasure of the author, the disaster that provokes the art loses importance, while the channelling of the unknown trauma takes importance.

Gibson structures his narrative to create a dialogue between Nora's tragedy and the second technological disaster depicted in the text, that of the destruction of the World Trade Center (WTC). Nora, mute since her attack, communicates through film and action. Upon hearing of the WTC attacks, "[s]he hurt herself" (290). The violence of the spectacle reiterates through self-immolation. This doubling of violence portrays the circulation of disaster through the public and the personal. In a Baudrillardean moment of simulated destruction, this later doubling of the disaster in the text reiterates the transferral of the original destruction into mediated symbolism. In the shortest chapter of the novel, "Singularity", Cayce recalls the day her father went missing in New York, September 11, 2001. Cayce was also in New York that day experiencing a "micro-event" during the first impact (135). In a poetic scene wherein Cayce follows the fall of a dead rose petal, Gibson depicts the displacement of the event during its occurrence. By the time of the impact of the second plane, Cayce arrives at her meeting after seeing "a fire, high up in the World Trade Center" (136). At the meeting, she watches the second plane's impact on television, specifically CNN, before turning her attention to the burning buildings through the window. Gibson's narrative control approaches an apex here. While using free, indirect discourse to create an emotional tone of rapid shock, the scene also defers the momentousness of the event. As a mediated disaster, Gibson's depiction of

technological trauma differs markedly from the body-laden violence of Cadigan's narrative. Yet, Gibson makes explicit the implicit disaster of technologies by representing this absence of materiality. *Pattern Recognition* effaces the effaced and thereby repositions it into discourse. Situated in the center of the novel, this traumatic event is neither a beginning nor an end but simply another scene within the narrative. Furthermore, Cayce's experiences of the moments of violence are both mediated, although in distinct ways. First, she watches the dead rose petal fall while hearing the initial impact. Gibson's invitation for a purely symbolic reading here is so strong that the reader must respectively decline and see the petal in relation not to the historical event, but to the media deferral of the second impact. Cayce notes the temporal effect of doubling when she later perceives that "[h]istory erase[s] via the substitution of an identical object" (194). However, in her experience of the WTC attack, while the object doubles, each of her experiences remains singular and dissonant. The falling rose petal does not double the CNN depiction of the towers. Thus, it is in the personal, at the nodes of the network, that Baudrillardean simulation breaks down.

The repetition of "Baudrillardean" in the preceding paragraph neutralizes each singular use but also calls forth the philosopher. Baudrillard, whose name appears in *Pattern Recognition* (48), is essentially a prophet of the double. When writing about the Two Towers in 1984, Baudrillard notes that "[f]or the sign to be pure, it has to duplicate itself: it is the duplication of the sign which destroys its meaning" (*Simulations* 136). He later describes their destruction as "the absolute event" (*Spirit* 4); the destruction of the double through the two planes created a tale of such pure symmetry that the event seemed perfectly designed for television or

cinema. In opposition to this broader geopolitical symmetry, Gibson positions the distinct, singular experiences of Cayce, which portrays the separation of experience from the visual upon which Jürgen Habermas remarks.[6] What this refiguration of the personal does is oppose the progress of the spectacle that emerged with television in the media age. While the global networks create the situation wherein the spectacle instantly transmits, as more nodes connect, the strength of the spectacle yields to a more pervasive terror:

> In the years of the Cold War there was danger, there was the danger that an enormous cataclysm might take place, affecting virtually everyone on the planet. The danger is different now. The danger is much more specific. The world isn't going to be destroyed, but you don't feel safe anymore in your plane or train or office or auditorium. (Don DeLillo qtd. in Pell)

This dissolution of the spectacle directly relates to Singularity mythologies. The predominant discussions following the WTC attack rightfully regard geopolitical situations; however, the disastrous technologies involved, specifically skyscrapers and airplanes, changed very little. Unlike the weapons of World War II and the Vietnam War, the focus of disaster fetishism was not "the smell of napalm in the morning" (*Apocalypse Now*). Instead, the popular paranoia immediately recentred around anthrax, white powder, and its circulation through the network. The

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[6] "The presence of cameras and of the media . . . transform[ed] the local event simultaneously into a global one and the whole world population into a benumbed witness. Perhaps September 11 could be called the first historic world event in the strictest sense: the impact, the explosion, the slow collapse—everything that was not Hollywood anymore but, rather, a gruesome reality, literally took place in front of the 'universal eyewitness' of a global public. God only knows what my friend and colleague *experienced*, watching the second airplane explode into the top floors of the World Trade Center. . . . No doubt it was something completely different from what I *experienced* in Germany in front of the television, though we *saw* the same thing." (qtd. in Borradori 28)

globalized telecommunications structure shifts the realm of violence into the abstract. Slavoj Žižek, commenting on September 11, nearly echoes DeLillo's statement above when he writes "[o]n the level of visible material reality, nothing happens, no big explosions; yet the known universe starts to collapse, life disintegrates" (*Welcome* 37). The twenty-first century technologies of the body, especially nanotechnology and genetic engineering, that will hearken the Singularity construct this system of perpetual, invisible violence, which operates alongside but apart from the spectacular technologies of nuclear violence that marked twentieth-century anxieties regarding progress.

Chapter 4

Nanotechnology's Refiguring of the Social Body

The evaporation of violence from a well-defined explosive nuclear spectacle to a perpetual, invisible threat opposes the diagnoses of Debord and Baudrillard regarding the modern zeitgeist. The theories of spectacle and simulation emerge out of the technologies of the nuclear age, which construct an all-encompassing destructive violence. Even the threat of a 'suitcase bomb' is the threat of a large, visible explosion and, more importantly, the corresponding destruction of people and property. While weapons of destruction still threaten societies with their spectacle, emerging technologies and the imaginative narratives that accompany them propose a singular model of violence for a singularly emerging social fabric.

The society of the spectacle Debord hypothesizes specifies the end of reality for a circulating world of representation. Debord's analysis of culture is emphatically visual and nostalgic. Images and representations interrupt the human's experience of the real. This relational diagnosis is especially important to Debord's notion of the spectacle, which "is not a collection of images; rather, it is a social relationship between people that is mediated by images" (Debord, *Society* 12). Thus, the spectacle does not destroy the real but makes it inaccessible to social relations. As a Marxist, Debord observes that the spectacle relies first and foremost on capital (*Society* 24) and is therefore a product of the industrial revolution's creation of excess commodity (*Society* 29). However, as economies shift into a post-industrial landscape, the shape of the spectacular society dissolves as well.

In the previous chapter, I note that Baudrillard is a philosopher of the double. Simulation is a theory of the appearances of the virtual and the evaporation of the real. As Baudrillard writes in his seminal work *Simulations* "[i]t is no longer a question of a false representation of reality (ideology), but of concealing the fact that the real is no longer real, and thus of saving the reality principle" (25). Baudrillard's theory relies on the play of appearances with the public and the masking of the real. The bias of his theory towards the visual is predictable given its emergence within the shift of production from material objects to brands and lifestyles. The rise of advertising in the latter part of the twentieth century precedes and proposes the theory of both spectacle and simulation for Debord and Baudrillard. Yet, advertising and the entire culture of images that accompany it are inertial follow-throughs of the industrial age and, through the networked society, accelerate into disappearance.

The disappearance of advertising in post-industrial society does not refer to its whole removal. Appearance requires two components: an apparition and a viewer. Advertising as an apparition is unlikely to cease because its role in the economies of space and capital flow has become essential. What will lead to its effective disappearance is a lack of viewers. In Neal Stephenson's novel of nanotechnology, *The Diamond Age*, two characters run "down a street that had developed into a luminescent tunnel of mediatronic billboards" (192). Advertising relates to the logic of the spectacle and, as that logic is made obsolete, Stephenson notes the inevitable evolution of advertising.

> Unremitting exposure . . . produced mediatron burnout among the target audience. Instead of turning them off and giving people a break for once, the proprietors had joined in an arms race of sorts . . . . The

> obvious step of making their mediatrons bigger than the others had been taken as far as it could go. . . . Once all the mediatrons were a hundred feet high and filled with tits, the only competitive strategy that hadn't already been pushed to redline was technical tricks. (192-3)

This evolution is already under way: bathroom advertisements, billboards on trucks, and all the other varieties that marketers come up with are all "technical tricks" for the same obsequious task of promoting commodity consumption. In *The Diamond Age*, the advertisements are not so much tools to promote and to construct culture than they are constants of the city landscape, akin to streets or housing. Nanotechnology, the science of the invisible, foregrounds and emerges from the end of spectacle. Instead of a society of the spectacle, nanotechnology is part of a society of the always already progressive negative: a society of the dissolving spectacle.

In Stephenson's novel, the pre-eminence of nanotechnology and the dissolved spectacle emerges from a diffuse network model. Miranda, who becomes a surrogate mother to Nell through a Virtual Reality conduit, discovers that the infrastructure of the media makes it almost impossible for her to track down Nell. Our modern telecommunications system, which Carl Hollywood explains to Miranda, is structured around providing communication between two people. One thinks of the common communication diagram that depicts a sender, a receiver, and a medium channel between the two for the message. Within the communication structure in *The Diamond Age*, this restrictive system no longer exists. Instead, Stephenson outlines a system that finds its precedence in the packet switching that governs the Internet. The person-to-person communication disappears within an

indefinite web, wherein the locations of the participants are unknown and unnecessary to the operation of the system (*Diamond* 245-7). Thus, the web allows a space for individuals to escape the constant nanotechnological surveillance that covers their society and their bodies. The threat of nanotechnology requires a literal micropolitics of surveillance to identify threats.

Nanotechnological warfare extends from the personal threat of terrorism, wherein the direction from which the violence comes is indeterminable and therefore everywhere. Stephenson imagines the difficulty of conventional violence, such as enacting a specifically directed genocide with nanotechnology as opposed to primitive "Elizabethan nuclear weapons" (349). Whereas nuclear MAD depends upon the enemy also having nuclear weapons, the difficulty with nanotechnological weapons is that "[i]f a person ate or drank one, it might end up in their body, but it might just go into the food chain and get recycled into the body of someone you liked" (Stephenson, *Diamond* 51-2). Nanotechnology, because of its ability for self-proliferation, only needs to be used by one party in a conflict to be a threat to all parties. The computing scientist Bill Joy, in his famous essay "Why the Future Doesn't Need Us", fears the threat of nanotechnological weapons to such an extent that he calls for the regulation and restriction of nanotechnological research (Milburn 290n83); however, Joy's fear is of a far more sophisticated nanotechnology than Stephenson's:

> Unfortunately, as with nuclear technology, it is far easier to create destructive uses for nanotechnology than constructive ones. Nanotechnology has clear military and terrorist uses, and you need not be suicidal to release a massively destructive nanotechnological

> device—such devices can be built to be selectively destructive, affecting, for example, only a certain geographical area or a group of people who are genetically distinct. (Joy)

Unlike Stephenson's imagining of a less specific and therefore more threatening nanotechnology, Joy agrees with the hype that surrounds nanotechnology as the ultimate technology of control. While nanotechnology always makes the individual body dangerous, such as Stephenson's stunning description of an elderly woman who "became a pearl of white light in the mouth of a dragon" through a nanotechnological bomb in her body (444), Joy's concern depends on believing the best of scientists and therefore the worst of science.

Unlike space travel, nuclear weapons and cyberspace, nanotechnology has the unfortunate distinction of being imagined most thoroughly not by science-fiction writers but by the technological researcher Eric Drexler, whose text, *Engines of Creation*, Joy cites as influential to his essay. The shadow of Drexler's imaginings is one that some researchers in nanotechnology are attempting to leave for a more reasonable model (Atkinson 7). William Atkinson, a science journalist, criticizes the unnecessary complexity of Drexler's model, as well as Drexler and his followers' penchant to degenerate into science fiction (7, 255). Of course, Atkinson is unable to restrain himself from science fiction, as his fictional section depicting nanotechnological life in 2015 demonstrates (17-25). Criticisms of Atkinson's hypocrisy are as erroneous as his criticisms of Drexler because the discussion of emerging technologies necessarily provokes fictionalization of science. Similar to Brooks, the problem arises in the context of their hypotheses. By placing their predictions within a predominantly fact-based text, both Drexler and Atkinson

provide predictions that are potentially misinterpretable as inevitabilities. The imagining of the not-yet-maybe-never is more effective and powerful when constrained to a fictional theatre. Thus, Joy bases his terror less on scientific potentialities as than on poorly written science fiction.

The discourse from which scientific texts emerge and work limits their predictive capacities and makes them dangerous. Scientific texts, even popular science texts such as Atkinson's *Nanocosm*, emerge out of the scientific method, wherein the experiment is objective and therefore Truth. As Virilio comments in an interview, "Experimental science is the opposite of storytelling, chimera and myths. . . . It is the idolatry of calculation, the idolatry of the genetic bomb, that has brought us back to alchemy" (*Crepuscular* 126). The truths of science are commandments in the grand religious tradition and, as such, provide myths with which to structure living; however, because of science's material subject, it is a poor and dangerous storyteller: poor because it attempts to forcibly make the imaginative real, instead of crafting a powerful story; dangerous because its stories provide the foundation for policy. Modern science's founding myth of objectivity prevents it from providing fully subtle stories for the intelligent development of policy. As Constable Moore explains to Nell in *The Diamond Age*, "the difference between ignorant and educated people is that the latter know more facts. But that has nothing to do with whether they are stupid or intelligent. The difference between stupid and intelligent people . . . is that intelligent people can handle subtlety" (256). Stephenson's novel attempts to articulate subtlety within an educated myth, that is, to disrupt the objectivity that scientific stories claim.

This oppositional reading of *The Diamond Age* takes issue with Marie-Laure Ryan's reading that the novel is "a grand narrative, in the Hegelian tradition, that chronicles the emergence of what some cybertheorists (among them N. Katherine Hayles) would call the posthuman" (339). To claim that Stephenson's novel is a chronicle and grand narrative is to ignore the context from which the novel emerges. Originally published in 1995, *The Diamond Age* appeared as the excitement surrounding the World Wide Web, Virtual Reality, and nanotechnology had reached an apex in the popular consciousness. This excitement, due largely to predictions and speculations in popular scientific writing, imagined possibilities distinct from the actual technologies of the time and the recent future. Stephenson's novel, in a techno-reactionary position that is indicative of post-Bomb science fiction, criticizes the Singularity predictions that occurred throughout this time period. Instead of providing a window to the posthuman of the Singularity, Stephenson troubles the notion of a linear progression from the human to the posthuman by constructing a world in which nanotechnology, a posthuman technology, coexists with and supports neo-Victorian caste system, which is similar to that of Victorian England, a humanist ideology.

Colin Milburn, in his misreading of Stephenson, writes that the "possible parameters of human subjectivities and human bodies, the limits of somatic existence, are transformed by the invisible machinations of nanotechnology—both the nanowriting of today and the nanoengineering of the future—facilitating the eclipse of man and the dawning of the posthuman condition" (270). Yet, in *The Diamond Age*, the opposite occurs and the novel actually fixes and reifies the "limits of somatic experience" in its representation of nanotechnology. Due to the

technology's invisibility, "visitors had to be carefully examined before they could be admitted into one's inner sanctum", which engenders "elaborate waiting-room etiquette" in order to facilitate physical examination (Stephenson, *Diamond* 155). Therefore, the body requires newer, firmer boundaries wherein even the microscopic is suspect. As is the case with genetic engineering, the fear of unseen technologies provokes more elaborate visualization techniques, which defines the body more rigorously. This progressive seeing is already in effect publicly, as is observable with explosive-detecting devices that many landmarks introduced after September 11, 2001. I first encountered one of these machines at the CN tower in Toronto. The machine looks similar to a metal detector, which is a set of eyes in its own right, but with one significant difference: when an individual steps into the explosive detector, it releases a small puff of air that is hardly noticeable. Yet, what this puff of air signifies is a shifting in visualization techniques from the customary passive metal detectors to a more invasive searching of the air and chemicals associated with one's body. These technologies foreshadow the culture of surveillance that Stephenson depicts.

The mention of surveillance calls forth Michel Foucault's interpretation of Jeremy Benthâm's Panopticon. Misread by many, including 'cyborg' Steve Mann, as a model wherein Big Brother perpetually surveilles and oppresses individuals, Foucault's interpretation of the Panopticon is actually based on the individual subject and his or her self-discipline: "He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power . . . he becomes the principle of his own subjection" (Foucault, *Discipline* 202-3). The extent of surveillance increases with each visualization technique, so that nanobots,

with their saturation of the environment in *The Diamond Age*, denote the limit of surveillance. Thus, following the Foucauldean dictum that discipline trains and alters behaviour (*Discipline* 203), a rigorous ethics of behaviour adopted from the Victorians, comes into play in Stephenson's nanotechnological society. As Major Napier explains regarding the neo-Victorian military's discretion in observing individuals, "In an era when everything can be surveiled, all we have left is politeness" (174). Notably, the technology modifies the behaviour of not only the surveiled, but also of 'Big Brother', which undermines the traditional top-down understanding of surveillance for a more diffuse Foucauldean model.

The rise of surveillance is also the fall of spectacle and as such, nanotechnology marks one of the final steps in the removal of the spectacular representation for a narrow ethics of behaviour. Technologies that provoke the Singularity predicate an epistemic shift in the understanding of the human. However, in opposition to Milburn's proposition that "nanonarratives resist traditional humanist interpretations by repeatedly depicting the future in terms that disequilibrate the human body" (287), Stephenson's 'nanonarrative' actually emphasizes a postmodern humanist interpretation rather than the modern posthumanist one Milburn identifies. The definition of humanism shifts with one's understanding of the human, therefore, the term "humanism" attempts to conflate several hundred years of a fluid concept. By "postmodern humanist", I refer to the specific model of the human that emerges out of the understanding of a fluidly centred identity that emerges through postmodernity. This identity is at its most prominent in cosmetic surgery discourse, wherein the subject claims a selfhood that survives and provokes the manipulation of bodily materiality. With implantable

credit cards, dirt-ejecting gloves, and full nanotechnological bodily overlays (Stephenson, *Diamond* 7, 9, 77-8), the body in nanotechnology becomes fluid and thoroughly interconnected with the technological. Yet, the society of *The Diamond Age* markedly separates into Phyles that, aside from the neo-Victorians, predominantly organize by race or ethnicity and therefore construct a specific notion of self within the fluid body.

Milburn bases his excitement over Stephenson's novel and the possibilities of nanotechnology for transcendent posthumanism on the communal Drummers. A group of people living underground, the exchange of nanobots through bodily fluid transfer transforms the Drummers into a disindividualized crowd. This distinction of the Drummers to the other Phyles enacts Foucault's distinction between the classical crowd and the modern disciplined society. The Drummers threaten to develop a technology that will disrupt the hierarchical environment that benefits the neo-Victorians. Instead of a few controlled singular Sources of nanotechnologically constructed materials, the Seed in development by the Drummers will allow anyone the ability to manufacture anything with nanotechnology in his or her home. The communism of the Drummers is certainly a subjectivity that undermines conventional humanist interpretations of the self; however, in the space of the narrative Nell thwarts the Drummers' construction through her love for the woman she sees as her mother, Miranda. The filial relationship according to neo-Freudians, especially according to the Lacanian mirror stage, frames individualized identity. *The Diamond Age* demonstrates this model of humanity opposing and defeating the whim of a communal mass. Therefore, despite the possibilities of nanotechnology, the self and its development succeed and are celebrated. The final image of the

novel is the ringing of cathedral bells (455), which hearken a Judeo-Christian humanist heritage. The promise of Singularity technologies falters beneath the presence-absence at play in postmodern humanism.

As Singularity technologies diffuse and further interpenetrate the conventional human, a social immune system emerges wherein ethical questions become more essential. As the moral of *The Diamond Age* reads: "Now nanotechnology had made nearly anything possible, and so the cultural role in deciding what *should* be done with it had become far more important than imagining what *could* be done with it" (31). The subtitle of Stephenson's novel is "A Young Lady's Illustrated Primer" and, akin to a primer, it provides an introduction to nanotechnological society. Akin to early primers, which taught children to read through prayers ("primer, *n*"), this introduction also provides a moral education on the rise of nanotechnology. Although the rise of Luddite science fiction truly expanded during the nuclear age, art has a vital role as an ethical force. It provides the literary *ought* to the scientific *can*. Nowhere is this issue more debatable than within the practice of genetic engineering.

Chapter 5

Rewriting the Apocalyptic Code

Genetic engineering continues the technological exploration of the body to its reductionist limit. The scientific fabrication of the body positions the 'truth' of the human away from its phenotypic characteristics to the structure of its genome. With the completion of the Human Genome Project and the improvement of sequencing technologies, biology positions individuality within the sequence of nitrogenous bases that make up deoxyribonucleic acid (DNA). Within cultural circulation, only the three letters are important. More and more often, DNA escapes its parentheses and operates as a signifier in and of itself, undermining and replacing that which it supplements, the proper name. The reality of DNA as an acid found in the nucleus that hydrolytically yields deoxyribose effaces beneath its virtuality as a code, a manual for life. The identity of the molecule is its abbreviation into reduced constituents. This process of the code replacing the truth of the whole allows DNA, a signifier that includes the circulating genetics discourse, to replace the truth of physical observation. Thus, coupled with genetics, biology loses its status as a lesser science involved in messy acts of subjective observation, at the bottom of a scientific hierarchy topped by 'pure' mathematics, and becomes a fact-finding, code-breaking—once the realm of mathematics—mission. Indeed, as Scott F. Gilbert notes, following quantum indeterminacy, which undermines physics' precision, and Kurt Gödel's theorem that undermines mathematics' attempts at perfection, biology is one remaining discipline that still can and does make truth-claims. This ability

and its growing importance as a cultural foundation leads Gilbert to conclude that biology should fill the void left by the fall of Western Civilization, or Western Civ, as a cross-disciplinary common course in universities (50).

The failure of Western Civ was the eventual outcome from the new, multiple narratives that emerge from the fruitful postmodernist and postcolonialist writings of alternative subjectivities into academia. The story of the rise and fall of Western Civilization is a story of stories and their competition:

> Once upon a time, in another, closely related, ethnospecific narrative field called Western philosophy, such entities were thought to be subjects and objects, and they were reputed to be the finest and most stable actors and actants in the Greatest Story Ever Told—the one about modernity and man. In the imploded time-space anomalies of late-twentieth-century transnational capitalism and technoscience, subjects and objects, as well as the natural and the artificial, are transported through science-fictional wormholes to emerge as something quite other. (Haraway, *Modest_Witness* 4)

Literature always approaches the story of the emergent other but can never write it and, as such, this story is a site of contention and competition. One of the competing narratives is the reconstruction of a genetic metanarrative that pretends to be scientific rather than science-fictional. Therefore, it is necessary to articulate the scientific, in this case the genetic, with the fictional in order to return the metanarrative to the library of narratives from which it emerges.

Jonathan Lethem's detective novel *Gun, with Occasional Music* adopts the genetic metanarrative and removes it of all metaphor and simile. The epigraph from

Raymond Chandler contains one of his typical hyperbolic similes, "the subject was as easy to spot as a kangaroo in a dinner jacket." Lethem referentializes this turn of phrase through the character of Joey, an evolved kangaroo who enforces for the criminal Danny Phoneblum. Evolution in Lethem's novel is a technological product thanks to the discoveries of Dr. Theodore Twostrand. Evolution is no longer a random process but a technological innovation that literally anthropomorphizes animals; the evolved animals fulfill roles within human society rather than forming different subjectivities. Thus, Lethem adopts the rhetoric that positions genetics as a specifically human narrative.

Richard Dawkins, in his essay "Son of Moore's Law" posits that genetic technologies will allow science to construct extinct evolutionary ancestors of *Homo sapiens*. Science is the subject because, in the construction of metanarratives, one needs an immortal symbol rather than fallible individuals; therefore, scientists disappear beneath the machinations of their discourse. When science rebirths extinct humanoid species Dawkins foresees a troubling of "our complacent human-centred view of morals and politics" (156). Yet, does not this statement force the newly evolved subject into a specifically human network? Genetics, therefore, does not allow for different subjectivities but instead forces a perfection of a specific, rather than a postmodern, humanist metanarrative. Just as many religions have expanded their stories to accommodate evolution, so shall humanism accommodate genetic engineering by expanding the notion of humanity. In Lethem's novel the animals evolve to the mythical endpoint of evolution: the socially productive Individual.

The Individual is different from the individual because, while the latter refers to a distinct constituent of something broader and divisible, the former denotes a

specific normative subjectivity that allows the operation of a broader social machine. While the animals evolve to specific identities, the humans in Lethem's novel normalize through the cruder method of intoxicants, which is also a genetic technology (Fukuyama 8). The chemical control of identity operates on a higher level of genetic manipulation, but refers back to genetic difference. According to the Central Dogma of genetics, DNA codes RNA, which codes the proteins that allow the body to function. Drugs interact with these proteins, thereby changing the output of DNA. Because of muddy observations, the directionality of the Central Dogma is no longer understood as linear but as multidirectional with each step influencing and changing the others (Weissman 169), or making DNA an output of protein manipulations. Drugs, through a regulation of use, construct a homogeneous Individuality. Lethem's characters partake of drugs with a specificity to make geneticists envious. Acceptol makes the user accommodating, while Forgettol erases the user's memory. Psychotropic drugs fabricate a possibility of individual control that undermines fragmented narratives, such as the unconscious. Freudianism is no longer scientific in the story of *Gun, with Occasional Music*; instead it is a religion with door-to-door pundits offering to read selections of *Civilization and its Discontents* (Lethem 78). The unthinkable unconscious relates to a transcendence of the human, which is necessary to the Singularity. Thus, genetic engineering is a technology firmly rooted in the body, which undermines typical narratives of transcendence while sharing the core metanarrative of the Singularity. The body and the mind become areas where no unknowns are acceptable and reconstitute individualities into Individuality and question the concept of human nature.

Genes within Human Nature

Reading *Gun, with Occasional Music* alongside Francis Fukuyama's *Our Posthuman Future* is fruitful as Lethem's novel fictionally explores the posthuman in stark denial of Fukuyama's fears founded on a vague conception of human nature. At one pivotal moment in his didactic text, Fukuyama presents himself as an elucidatory detective at the end of a case searching for "Factor X," which is "human essence, the most basic meaning of what it is to be human" (150). Despite some forthright rhetorical posturing, Fukuyama is nevertheless obliged to mask the definition of the human behind complex emergence:

> Factor X cannot be reduced to the possession of moral choice, or reason, or language, or sociability, or sentience, or consciousness, or any other quality that has been put forth as a ground of human dignity. It is all these qualities coming together as a human whole that make up Factor X. (171)

Much like Singularity theorists, this definition uses unthinkability as proof. Genetic engineering proposes a level of control that undermines this ineffable quality and therefore endangers the human. In Lethem's novel, however, the ineffability of the human, specifically the socially contributing young to middle-aged adult human, is the standard towards which evolution therapy manipulates gorillas, cats, kangaroos, and even babies. Furthermore, Conrad Metcalf, the detective protagonist, solves the case for which he was hired. Unfortunately, the problem that troubles Metcalf is inconsequential in the broader social oppression that the novel presents in the

margins of the story. Correspondingly, the question Fukuyama pursues is a rhetorical red herring, inconsequential within the social implications of the technology.

Arguing against genetic manipulation because of individual human dignity is useless because undermining ineffability is the long-standing purpose of not just genetics but all sciences. This argument is similar to the aforementioned precautionary principle, wherein environmentalists criticize the use of synthesized products because of the ineffable activities of ecological networks. Unfortunately, similar to claims that God causes abnormal activities, this claim of ineffability is little more than a challenge to the believers in an objective truth. The Enlightenment project to uncover all that darkness shrouds with the pure light of reason remains predominantly at play in the sciences. The control computers offer provides an antidote to the terror of nuclear weapons, so does the control of genetics soothe the inadequacy before defining the human. Fukuyama's fear is not of losing the human empirically, as he claims; rather this fear is of agreeing with Rodney Brooks that we are little more than biological machines.

Fukuyama is most famous for using Hegelian philosophy to claim that human society is at the end of history because the most perfect political system of liberal democracy was present. As Derrida's philosophy of the "to come" indicates, this assertion is incorrect and impossible. Nevertheless, in *Our Posthuman Future* Fukuyama again presents the wonders of liberal democracy as the best option to regulate scientific, specifically genetic, research because there is "no obviously better alternative" (186). This argument reads similarly to his human dignity defence—the it-just-is-that's-why argument. Fukuyama exposes himself as a

theorist of reified limits. He diagnoses the end of history and the firm identity of the human. Fukuyama adopts this solution because, once again, the alternative, totalitarianism, is unacceptable.

By neither understanding the human body as a biological machine nor accepting the extreme regulatory possibilities of centralized totalitarianisms, Fukuyama invites his reader to equate genetic manipulation with its early twentieth-century heritage of state-run eugenics programs. Fukuyama also notes the inadequacy of a libertarian promotion of allowing the free market to regulate genetic research (99-100). Therefore, despite its many flaws, Fukuyama's book is important because it refuses the notion of uncontrollable technological progress and promotes widespread regulation of genetic research. Unfortunately, this proposal follows from a flawed understanding of scientific research as an amoral pursuit. If science is means separate from end, as Fukuyama suggests (185), then an external regulator is necessary. This argument does not provide a new understanding or ability to effectively interact with scientific research. Instead, Fukuyama, like Lethem's detective, seeks an answer to an irrelevant question, while the important problems continue unchecked. A separate regulatory institution on a discipline narrativized as amoral and objective presents a myth not necessarily of control, but certainly of freedom. Genetics, as Žižek adroitly observes, undermines ineffable chance by putting the human at the mercy of rational decision; consequently, constraining technologies is an irrational act in the service of preserving the freedom of chance ("Of Cells" 307-8). This logic recalls Chaloupka's thesis on the importance of computers to provide a psychological sense of control over the unthinkable nuclear apocalypse. This freedom is that which Fukuyama attempts to preserve: a freedom

to control a footnote within a more difficult and dangerous story. I wish to write narrativity onto an intractable problem, such as that of freedom versus control, because in many cases the "science-fictional wormhole" Haraway writes of is the most political and ethical path through such a problem.

> We exist in a sea of powerful stories: They are the condition of finite rationality and personal and collective life histories. There is no way out of stories; but no matter what the One-Eyed Father says, there are many possible structures, not to mention contents, of narration. Changing the stories, in both material and semiotic senses, is a modest intervention worth making. (Haraway, *Modest_Witness* 45)

Conrad Metcalf's solution to fighting a society that he finally realizes has grown oppressive and controlling is to return to its cryogenic prison, in hopes to awaken in a better time. He describes himself as "a hobo tossing bricks through shop windows to get a place to sleep for the night. If I didn't like where I woke up next time, I'd get myself in trouble again, until I found a place where I fit in or they stopped offering me the free ride" (262). Similarly, Fukuyama's solution to a dangerous myth of unchecked science is to use an institution for which there is no better alternative that has thus far required that illusion of science for its progress and success. The only freedom for Metcalf is within prison and the only freedom for Fukuyama is within a strict regulatory/disciplinary network, which, as Foucault's historical analyses argue is within the same epistemic space as the prison and modern biological sciences. There is no direct regulation of science; both politics and religion are unable to direct or restrain science (Virilio 143). The only option is a new story of science and technology that incorporates a broader ethical position

that is not only contestable but also adaptable. I discern the beginnings of this new story with Atwood's masterful post-apocalyptic novel *Oryx and Crake.*

Posting the Apocalypse

To post the apocalypse, which is to not only come after it but also send notice of its coming, undermines the purity rhetoric of that apocalypse. Furthermore, it undermines the beauty of suffering that rose alongside Christianity (Eco, *History* 135). The apocalypse is the supposed final moment of suffering when God will liberate some people and condemn others. Within Christianity, this Second Coming is the always already approaching *telos* that marks a dynamic epistemic shift. It is reminiscent of Singularity rhetoric, for example Daniel Hillis' proclamation that "We're heading toward something which is going to happen *very soon*—in our lifetimes—and which is fundamentally different from anything that's happened in human history before" (qtd. in Žižek, "Of Cells" 305, emphasis mine). Also, Ray Kurzweil titled his most-recent book *The Singularity is Near*[7]. Of course, whenever I read about the fast-approaching revolution, I cannot help but think of the Great Prophet Zarquon in Douglas Adams' *The Restaurant at the End of the Universe* who ineffectively appears to his disciples moments before the universe ends. He does arrive, but the physical reality of the universe ending cuts him off in mid-sentence. The post-apocalyptic undermines this rhetoric of imminent conclusion and salvation by presenting a remainder that forces a reconsideration of apocalyptic philosophies. The virtue of the apocalypse comes only through a

[7] This book's publication date of September 22, 2005 is too late for me to discuss it; however, based on recent articles by Kurzweil, I predict much more of the same rhetoric I discuss in Chapter 1.

representation of the present in a state of decay (Haraway, *Modest_Witness* 41) and thereby re-enacts the myth of progress. Devaluing the present, whether to promote the future or engage in nostalgia, is a method of eschewing responsibility and ethical actions; therefore, the post-apocalyptic, when properly written, is a narrative about taking the present to task by undermining the perfection of the progress metanarrative. The structure of *Oryx and Crake* fully engages the progress metanarrative by not only representing a post-apocalyptic world but also a world that progresses towards the apocalypse. The Singularity is a pseudo-apocalypse. While both signal a rupture to pass rather than an otherness always already to come, Singularity theorists avoid discussing the violence inherent in the notion of the apocalypse. It is not until the final chapters that the reader fully apprehends, through Snowman's flashbacks, the precise mechanism and enormity of the apocalypse. Atwood's novel at once approaches apocalypse and retreats from it. Unlike Fukuyama's tactic to supplant the progress metanarrative with a simplistic humanist metanarrative, Atwood's novel presents a more complex model that troubles progress without replacing it.

The opening moment of the novel depicts Snowman—as far as the reader is aware, the only surviving human—looking at his watch, which no longer works. "He wears it now as his only talisman. A blank face is what it shows him: zero hour. It causes a jolt of terror to run through him, this absence of official time. Nobody nowhere knows what time it is" (5). The watch, post-apocalyptically, signifies absence, which Atwood emphasizes through the almost-incantatory double negative "Nobody nowhere." Again, this writing of the post-apocalyptic demonstrates its necessary remainder. There is nobody, so they can be nowhere. Yet grammatically

this statement, as a double negative, means either "some/everybody nowhere" or "nobody some/everywhere" both of which are nonsensical, but imply a remainder presence within the unending absence. The only phrasing that signifies is the one that does not follow the grammatical rules of conventional linguistic signification. This restructuring of language does not signify an unthinkability but, as the conclusion to the novel proposes, a necessity of thinkability for the unthinkable.

The final paragraph of the novel represents the necessity of interpretation to trouble the despair of disaster. At first, it may perplex the reader that this dark and ominous novel does not end with an extended epilogue moralizing about the dangers of genetic engineering and the glories of a primitivist existence. Instead, Atwood concludes her novel thusly: "Zero hour, Snowman thinks. Time to go" (443). The invocation of zero hour recalls the opening of the novel; however, whereas the opening of the narrative represents zero hour as a signifier of despair, the end of time, the zero hour at the end of the narrative signifies a beginning. It transforms from a signifier of the end to a signifier for change. This semantic shift occurs through Snowman's reminiscence and renewed understanding of the past, which allows for a more positive future and mimics the role of bioethics in the novel.

Through his despair at zero hour in the novel, Snowman confronts freedom and the impotence/disappearance of social institutions that provided an enclosed shell throughout his life. Similar to the Phyles in *The Diamond Age*, Snowman and Crake both grow up in corporate Compounds where their parents work in genetic research, while the majority of society lives in the anarchic, crime-ridden pleeblands. The society of the corporations separate from the general populace shifts from the meritocratic ideals that found capitalist rhetoric towards the hereditary principles,

similar to monarchical nobility, that truly underpin it. Snowman and Crake receive certain advantages in their youth and throughout their lives because they are fortunate to have parents who are part of a corporate Compound, rather than through any productive work. Atwood represents the steady rise of alienation and control through a skilful representation of parental nostalgia through the eyes of a prepubescent Snowman.

> But everyone's parents moaned on about stuff like that. *Remember when you could drive anywhere? Remember when everyone lived in the pleeblands? Remember when you could fly anywhere in the world, without fear? Remember hamburger chains, always real beef, remember hot-dog stands? Remember before New York was* New *New York? Remember when voting mattered? . . . Oh it was all so great once. Boohoo.* (75)

Snowman's youthful *ennui* regarding these losses is the voice of those raised within a specific system, which in his case is a pre-Singularity system wherein everything changes at such a pace that loss and absence is negligible. Snowman's identity fully forms through this social discourse, thus when these institutions end with the deaths of the individuals running them, he experiences a "jolt of terror" and undergoes a process of reminiscence that allows him to see possibility within the zero hour. Similarly, the rise of genetic technologies leads to a rise in bioethics institutions, which will fail without the imagination of individuals to interact with the ethical problems of genetics.

Many social scientists such as Fukuyama propose to solve the proliferation and potential of genetic technologies through institutional regulation, whereas

scientific researchers such as Gerald Weissman and Singularity theorists promote research's unfettered growth. Weissman adopts an epistemological *laissez-faire* approach, which says let ideas grow and move as they will and the best ones will arise or else "[w]hen lawmakers ban research in any area of science, they can have no inkling of how many roads they've closed, of how many of their fellow creatures their irrational fears condemned to blindness" (21). Weissman believes in the power of positivism and the belief in a free science. If one takes Foucault's equivalency between positivism and eschatology seriously (*Order* 349), as one should, then positivism is not free but necessarily part of a tale of progress and physical restrictions. Thus, science is part of a particular discursive network, one that Foucault claims may dissipate in the future by undermining the primacy of the category of 'man' (*Order* 350-1), which is precisely what Fukuyama seeks to protect through regulation. Paradoxically, the scientist who proposes unregulated science seeks to protect the same myth that promotes regulation through a different translator. It is no coincidence that the Human Genome Project's discovery of fewer human genes than originally expected allows for a greater importance of bioethics discussion; fewer genes imply a lesser role of nature in the nature-nurture discussion of individual development, therefore cultural regulation through bioethics institutions reasserts the role of nurture. Yet increased regulation continues the positivist project by disallowing the political character of science and does not only not prevent but accelerate apocalypse by promoting a utopian resolution of all conflict in a final revelatory moment. Atwood's *Künstleroman* constructs a viable alternative to the circular regulation debate, not by questioning 'man', as Foucault suggests, but by refiguring the underlying discursive network that produces the term.

Art's Travel

A *Künstleroman* is a story that traces the journey and, often, development of an artist. Snowman, although he is not a typical artist, undertakes such a journey. As Snowman's father's title of "genographer" suggests (27), the genetic revolution in the world of *Oryx and Crake* creates new definitions and identities. Within this discursive network, one that, similar to modern times, favours and privileges scientists, what is the role of art and the artist? The college that Snowman attends while he is younger and still named Jimmy, before the apocalypse and his self-renaming, is the Martha Graham Academy, named after one of the progenitors of modern dance (Teachout par.1). The statue of Martha Graham at the Academy is iconic of the complicated and devalued position of art and its effects on its practitioners. The statue represents Martha Graham playing Judith holding the disembodied head of Holofernes from an apocryphal biblical story. The students regularly vandalize it; however, the same students oppose its removal by offended parents (226-7). Despite their disrespect for Martha Graham and her statue—"[r]etro feminist shit, was the general student opinion" (226)—the students regard the history that the statue symbolizes as necessary to their identities as prospective artists. This conflicted position emerges from the shifting nature of the Academy. Students no longer apply to schools; the institutions bid on them in a draft and expect a utilitarian return on their investment. Therefore, even an arts school like Martha Graham modifies its original idealistic motto, "*Ars Longa Vita Brevis*", with the cry of desperation that even now is part of Arts faculties, "Our Students Graduate With Employable Skills" (229). While these two mottos appear in a

mutual relationship, they are antithetical and demonstrate the troubled artistic position from which Snowman begins. The emphasis on employable skills is an emphasis on life over art, which accompanies the shift of immortality from the ether of artistic influence to the materiality of the Singularity body. The end of death prefigures the death of art. Thus, the apocalypse that Atwood's novel posts is the destruction of society and art. This point is where Snowman's journey begins.

Snowman's trip to the Paradice project in the ReJoovenEsense Compound is a return to the place where the apocalypse and therefore the story begin. Atwood writes his physical return as a spiritual return, constructing a past narrative that approaches the same location as the simpler physical journey. Thus, Atwood reminds the reader of the artist's role as an archivist as well as a creator. Art, to be of importance, must not only provoke or be consumed, as Umberto Eco typifies twentieth-century art (*History* 414). *Oryx and Crake*'s epigraph from Jonathan Swift's *Gulliver's Travels* indicates the role of art outside of a provocative-consumptive dialectic: "I could perhaps like others have astonished you with strange improbable tales; but I rather chose to relate plain matter of fact in the simplest manner and style; because my principal design was to inform you, and not to amuse you." The information Swift's novel imparts on the reader is not a collection of specific facts but an education through story regarding metaphysical discourses. Crake, the archetypal scientist, fears the development of metaphysics in his transgenically designed 'people', the Crakers. Snowman recalls his absent friend's condemnation of art:

> *Watch out for art,* Crake used to say. *As soon as they start doing art, we're in trouble.* Symbolic thinking of any kind would signal downfall,

> in Crake's view. Next they'd be inventing idols, and funerals, and grave goods, and the afterlife, and sin, and Linear B, and kings, and then slavery and war. (430)

The Crakers have many animalistic traits: they mark their territory like canines, mate like baboons, and are solely herbivorous, amongst other traits. Furthermore, Crake prevents them from growing beards, which he found "irrational" (11) and unsuccessfully attempts to remove their abilities to dream and sing (419). The Crakers ironically embody their creator's aesthetic and are therefore the artistic representations that their creator fears they will construct. Upon Snowman's return from the place of history to the Crakers' village, he finds that they constructed an effigy of him and chant for his return. Snowman's return is the return of representation and art into the community. Thus, Atwood implies the representational impulse is part of the human beyond genetic manipulation. This novel accepts Haraway's criticism of "Western intellectuals, perhaps especially natural scientists and philosophers, [who] have historically been particularly likely to take their cultural stories for universal realities" (*Modest_Witness* 60) and proposes the act of creating cultural stories as a universal reality. The reopening of stories opposes and undermines the myth of the apocalypse and the endings fantasized by Singularity theorists. But art deserves a role that is more than simply oppositional to the technoscientific metanarrative. Virtual Reality provides a mode to understand the relationship between art, technology and the Singularity.

Chapter 6

Art's Role in the Second Real

Virtual Reality (VR)[8], much like the telecommunications structures discussed in Chapter 3, is a technology of restructuring connections as Richard Powers represents in an early scene of his novel *Plowing the Dark*. Following her first experience in the virtual environment at Seattle, the protagonist Adie Klarpol returns to her home in New York. Upon her return, the city repeatedly violates her as though she were newly from the countryside with fables of Frank Sinatra in her eyes. Powers prevents this representation from devolving into a cliché of the dangerous city attacking innocents. Adie is an experienced New Yorker, but "[a]fter a dozen years, New York turned on her, expelled her like an amateur. One more accosting . . . and Adie realized what was happening. She'd started to make eye contact. Fallen back into that old, bad habit of looking up at people. And to look, in this place, was to beg for erasure" (23). This experience predicates her decision to move to Seattle and work as an artist on the Cavern project. This moment of the novel establishes the virtual environment, which is alternately known as the Cavern, the room, and Crayon World, as antithetical to the alienating icon of capitalism, New York. Thus, the novel appears to be another voice praising the wonders and glories of virtual reality in opposition to the tragic violence of reality; but, because, this argument occurs within a novel written by a virtuoso, a work of

[8] This capitalized form refers to the material technology and its software, whereas "virtual reality" refers to the abstract notion of a secondary reality, otherwise referred to as a "virtual environment".

literature, it turns toward itself and away from itself and continually troubles any conclusions the reader attempts to glean.

Adie occupies the role of the Luddite sceptic who makes generic protests—"*We're not meant to be able to do this. It's not good for us*" (39)—while extolling the virtues of the organic, especially the ability of the human hand. This paranoia towards the simulated and glorification of the organic is a common argument against Singularity theorists such as Kurzweil and Moravec. Adie eventually accepts VR for her return to art, which signifies a reversal in her Luddite attitude. Indeed, as Powers situates Adie's move to Seattle in reaction to the violence of an alienated community, he supports Baudrillard's claim that "man has ceased to believe in his own existence, and has opted for a virtual existence, a destiny by proxy. Then all our artefacts become the site of the subject's non-existence, of his desire for non-existence" (*Perfect* 39). Thus, VR is a Singularity technology in that it embraces a form of death for immortality. Unique among the technologies discussed thus far, except perhaps nuclear weapons, virtual reality had a complex epistemological position before the technology developed.

The Renaissance of Virtual Reality

Quite often the discussion of VR, as with nanotechnology and genetic engineering, is more an experiment in rhetorical hubris rather than a philosophically relevant discourse. Ken Hillis, a professor of media studies, writes that VR is a symptom of humanity's desire to control nature (vii), while the philosopher Don Ihde writes that the "ultimate goal of virtual embodiment is to become the perfect

simulacrum of full multisensory bodily action" (7). In combination, these two provide us with the beginning and conclusion of a tale that suspiciously resembles a biblical narrative. One of Adam's first acts was to name his environment and, in naming, linguistically dominate it. Ultimately, this act is but the opening incident for an ending that results in a simulacrum of perfection, the New Jerusalem that does not resemble the original of the same name. However, despite its usefulness for a mythic structure, the Bible is not the story of VR.

While a virtual environment allows the user the delusion of complete control, the material reality of VR is a technology that requires an extensive infrastructure of technicians, programmers, artists, buyers, and sellers, all of whom Powers carefully enunciates in *Plowing the Dark*. The subjective desire for control is not the origin of VR's development. Instead, VR emerges out of a complex discourse of social desires and technological abilities. Ihde's "ultimate goal of virtual embodiment" is one that some researchers pursue but others deride, just as video games are an escape for some users and a simple amusement for others. The desire provoking VR is not the marginal drive for a perfect immortal body, as Ihde suggests, but to provide a path to approach the real. In *Plowing the Dark*, a few characters use the Cavern, whether the experience of the virtual environment or simply working on it, as an escape from personal trauma, most work on it because they perceive it as a new frontier for exploration of the real, such as the economist Ronan O'Reilly. The Irishman develops an economic program in order to predict the future of the globalized society, which Powers presents as the 'killer app' of VR. John Casti's book-length analysis of VR in science demonstrates that VR's primary role is the construction of reality-based simulacra, which is constructing models for complex

systems that are impractical or impossible to test in laboratory conditions, such as nuclear weapons, genetic engineering, or, in the case of O'Reilly, the future geopolitical curve. Unfortunately, the future that O'Reilly discovers from the starting conditions of 1989 is always one of apocalypse circa 2030 (338-340). While he admits that this foreknowledge does not change anything (340), he returns to his lover in Ireland, abandoning not only the project but also the future, "the runaway victory of the flat graph" (402). Thus, O'Reilly enacts a conclusion opposed to Ihde, Hillis, or Simon Penny who regards VR as a culmination of the Enlightenment. Žižek phrases the complex interaction between simulation and reality that results in O'Reilly's personal crisis and change:

> Our point is thus a very elementary one: true, the computer-generated "virtual reality" is a semblance, it does foreclose the Real; but what we experience as the "true, hard external reality" is based upon exactly the same exclusion. The ultimate lesson of "virtual reality" is the virtualization of the very "true" reality: by the mirage of "virtual reality," the "true" reality itself is posited as a semblance of itself, as a pure symbolic edifice. The fact that "a computer doesn't think" means that the price for our access to "reality" is that *something must remain unthought*. (*Tarrying* 44)

Instead of control, virtual reality reinforces unthinkability onto not only itself but also reality. VR is not a Xerox technology, designed to duplicate 'true' reality as Mark Poster contends (42). VR is more similar to an antiquated notion of art, which is how Adie initially misperceives it in Powers' novel.

Adie overcomes her resistance to creating with VR when the project's director, Jonathan Freese, gives her an open-ended assignment. "Learn. Enjoy. Make something beautiful. The man came from another galaxy. One that Adie abandoned when she gave up art. One that art had abandoned around the turn of the century" (54). It is worth noting that the "turn of the [twentieth] century" corresponds with at least two prominent aesthetic shifts: the overall success of novels as the predominant literary form; and, the beginnings of modernism with its emphasis on the personal over the epic myth. However, VR hearkens back to an earlier aesthetic that Foucault and Eco attribute to medieval art. Unlike the silences of the later aesthetics, the pre-Classical aesthetic, to use Foucauldean terminology, "consisted in relating one form of language to another form of language; in restoring the great, unbroken plain of words and things; in making everything speak" (Foucault, *Order* 44). VR operates according to a similar aesthetico-functional principle. Adie's initial design fails to interest users because her objects are not interactive and everything in a virtual environment must speak. The pundits of artistry in VR, such as Marie-Laure Ryan, do not acknowledge this historical aesthetic and instead regard VR as new media with new possibilities; however, VR's heritage belongs to an idea of art wherein the supernatural penetrated all representation (Eco, *History* 121) and the printed medium was indeed comparatively scarce. Thus, does VR contribute to the coming end of the printed word that new media scholars often predict? Is Michael Heim correct when he claims that the "art of virtual reality shatters the modern aesthetics where we sit back as passive spectators or jaded listeners or bored manipulators" (63)? Powers' novel fiercely opposes Heim's simplistic understanding of modern aesthetics and firmly situates

itself against a conventional narrative of progress that has virtual reality supplanting literature, specifically the novel.

Art and the Social

Richard Powers devotes his novels to exploring doubles, which is especially prevalent in his novels' conceit of two separate but related narratives. For example, in *Gain* Powers writes the rise of a corporation alongside the tale of a woman dying from cancer in the corporate town. This dual narrative structure, which attempts to reconcile irreconcilable otherness, according to Joseph Tabbi, situates Powers' novels in the role of constructing and promoting community (70). The two narratives of *Plowing the Dark* relate more tenuously than Powers' other novels because they attempt to create a community between two oppositional material situations. Alongside the story of Adie Klarpol and the high-tech world of VR development, Powers situates the tale of Taimur Martin, a Persian-American kidnapped while teaching English in Beirut. Taimur's suffering and search for salvation within his imagination starkly contrasts to the bourgeois concerns of Adie and fellow developers. Yet, the disparities between the two experiences force the reader to more fully confront Adie's narrative to glean meaning from the relation Powers constructs. The conventional interpretations of *Plowing the Dark* are as a novel of the celebration of the imagination and that Powers "insists on human perception as the measure of things" (Rosenthal). This reading is not incorrect but it is insufficient. Taimur's survival within "the heaven of last imagination" and "paradise of detachment" (145) is a paean to the imagination and its children in Art.

But, this room of the imagination that provides Taimur with the keys to his survival is not just a heaven and a paradise but also a "room of no consequence in the least. Of making no difference in the whole known world" (145).

Claiming that a novel preaches the importance of art and imagination is like noting that the Prime Minister of Canada speaks on the virtues of his country. Art is the novel's *raison d' être*. The more important issue Powers addresses in his novel is the discursive position of art and the imagination. Taimur's position as a hostage makes him realize that, for the disadvantaged kidnappers, "books are not even a luxury. They are an obscene irrelevance" (289). Irrelevant beauty is precisely the aesthetic that Adie and art abandon and to which VR promises a return. Unfortunately for Adie, but fortunately for art and artistry, irrelevant beauty is a cultural symptom that is part of a deviant strain of art, one that Umberto Eco identifies as the art of the twentieth century. The art of, or rather, for consumption is irrelevant and, due to its ephemerality, cannot be part of a lasting aesthetic reaction, which I agree with Wittgenstein is the most important part of aesthetics (213). The art of provocation seeks to avoid beauty in the hopes of constructing some relevance for itself through invoking a reaction, which is separate from the contemplative yet disruptive aesthetic response. This binary belies the balanced yet violent nature of an aesthetic response, as best expressed by the modernist writer Franz Kafka.

> I think we ought to read only the kind of books that wound and stab us. If the book we're reading doesn't wake us up with a blow on the head, what are we reading it for? . . . [W]e need the books that affect us like a disaster, that grieve us deeply, like the death of some one we loved more than ourselves, like being banished into forests far from everyone, like a

> suicide. A book must be the axe for the frozen sea within us. (qtd. in Auster 137)

Thus, the problem that *Plowing the Dark* explores is central to the role of fiction. Within a globalized world of the Tianamen Square violence (which has a pivotal role early in Powers' narrative) and punishing kidnappings, neither of which change or improve the world, can a book still affect us as Kafka says it must? Or, is the path of obscene irrelevance, what Powers implies is the path of VR, the only progress that the Singularity promises?

Adie's confrontation with transcendent technology conflicts with the powerful homecoming of Taimur to present a complex view of aesthetics and the political role of art. Adie realizes through the media-friendly Gulf War that the simulation technologies that she helps develop has distinct military purposes. This understanding shakes her out of her *l'art pour l'art* reverie. Powers crafts this moment as a violent epiphany, wherein a kernel of the Real pierces the illusionary world Adie constructs for herself. In her rage, she does her best to destroy all of her input into the project, essentially erasing her life of the previous few years. The novel places Adie's abandonment of the project simultaneously with O'Reilly's. O'Reilly's removal signifies a rejection of the geopolitical situation in favour of personal community, while Adie's response is an understanding of a shocking principle. Art is never for its own sake. It is always already political. Adie says, "*All I wanted to do was make something beautiful. Something that wouldn't hurt anyone*" (397). But, as Kafka eloquently reminds us, the beautiful must hurt in order to be worth reading, which demonstrates the failure of VR to truly engage its 'users' aesthetically.

VR, in the words of its founder and corresponding deserter Jaron Lanier, is meant to become an "additional reality" (qtd. in Virilio, *The Virilio Reader* 159) rather than an aesthetic mode of interrogation. VR promotes a pure interactivity with one's world in a manner that prevents a material interaction with the VR itself; instead one constructs a virtual reality in the attempt to manufacture *The Daily Me*, which as discussed above is negligent ethico-politically. Ryan reads VR "as a metaphor for total art" (347) and, as such, reads the complete empowerment of the reader as the end purpose for art. Therefore, literature's power stays within its interactions with its constraints (Ryan 353-4), such as the figure of the author whose function is necessary in the illusion that VR ends (Ryan 32). But the other produces illusion and the constraints of literature force speech to the unthinkable nature of the other, which the Singularity seeks to replace. Literature, as in Powers' novel, opposes removing these limits, while simultaneously it tries to shatter boundaries as an "axe for the frozen sea within us."

The final scene of *Plowing the Dark* is a simple reminder of the force of art, especially art from an artist. Taimur spent 1,001 nights as a hostage to Islamic rebels in Beirut. The time-period is an allusion to Scheherazade and the wheel of stories that carries her to freedom in *Arabian Nights*. Similarly, Taimur's imagination is all that allows him to pass the time without going mad and, once he learns of the real time he has spent kidnapped, he falls into delusion. The confrontation of the real and the imaginative results in Taimur's breakdown. He awakes in the virtual reality room constructed by Adie, creating a connection between the imaginative acts that forms a weak point in this otherwise brilliant novel. After this event, Taimur, through no act of his own but survival, is released.

Upon his return to America, his wife and the child born while he was in captivity meet him. In the encounter between father and daughter that closes the novel, as her imaginary father becomes a reality, she presents him with a gift. "'Look,' she says, shoving her drawing into your shaking hands. A crayon man, returning to a crayon home. 'Look! I made this for you'" (415). Powers writes Taimur's narrative in the second person, which gives Taimur's struggles immediacy for the reader and allows Powers to directly address the reader beyond the constraints of the novel. Powers made this tale for his reader. The book becomes a gift rather than an open area to empower the user. As a gift, the narrative works to establish community through the transmission with otherness.

VR apparently constructs community, but actually prevents its productive development by limiting reality. Lanier writes of the virtual world's construction as a communal process, where you "breed[] reality with other people. . . . [Y]ou make the world together as a form of communication" (qtd. in Poster 43). But this togetherness comes with a promise of godhood, of the creation of worlds, of a removal from the natural constraints that force community as such. The community of and through VR is a community that avoids the troubled violence inherent in constructing community. I agree with Don Ihde's diagnosis of VR fantasies as "masturbatory and narcissistic" (84) with a modest caveat. Critics (including myself at a younger age) often use the tale of Narcissus as a model for the subject lost within the self-reflective network of postmodernity. What this reading omits is the prophecy preceding Narcissus' death. The seer Tiresias predicts that Narcissus will come to tragedy if he "come[s] to know himself" (Ovid 85). Narcissus does not wither away and die because of an illusion or a virtual figure. He languishes at the

limits of his real self. VR, synecdochally for the Singularity, threatens not the real but the virtual.

Theorists, including Ryan and Baudrillard, celebrate and condemn virtual reality because it supposedly ends the real for a paradise or hell of the hyperreal. Yet, the real, in the network of empirical transcendence and multiple repetitions, is not under threat. Reality remains—"everything is here and not other" (Žižek, "Is it Possible" 111)—and the virtual dissipates. The danger of Narcissus' reflection is not as a fantasy in which he loses himself. The reflection brings Narcissus to know himself and thereby close the epistemological gap, that is, the otherness that appearance brings. So too VR removes the absence that appearances construct for an immediate reality. Eco writes, in his essay on hyperreality in America, that the reproductions he comes across in American wax museums, including Leonardo da Vinci's *The Last Supper*, supplant the real objects instead of provoking a desire in the viewers to see the originals ("Travels" 119). The absent originals, often worn with age, disappoint and disappear in comparison to the reality of the present copy. Benjamin, when he writes of the end of artwork's aura, constructs a foundation for understanding the copy as reality rather than virtuality. Benjamin's essay, while tinged with mourning, celebrates this "emancipation of the various art practices from ritual" (284) because it politicizes the aesthetic and, like the graduates of Margaret Atwood's Martha Graham Academy, gives art employable skills. VR employs these skills in the recreation of a pre-Renaissance aesthetic that ironically resets art into a ritualistic, transcendent moment. Literature, through language, resists wholesale employment and as such engages the dangerous myths of transcendence that Benjamin envisions film and other "emancipated" art forms to engage.

Literature, the books about which Kafka writes, explores the violence and absence of death. VR, Žižek argues, "offer[s] a product deprived of its substance" or reality without the "the hard resistant kernel of the [Lacanian] Real" (*Welcome* 11). This aspect denotes an attempt to avoid the otherness that exists at the base of reality within the virtual. The language that literature uses immediately creates an otherness between the author, the text, and the reader. As the narrator in Thomas Bernhard's *The Lime Works* aptly describes:

> Words ruin one's thoughts, paper makes them ridiculous, and even while one is glad to get something ruined and ridiculous down on paper, one's memory manages to lose hold of even this ruined and ridiculous something. Paper can turn an enormity into a triviality, an absurdity. If you look at this way, then whatever appears in the world, by way of the spiritual world so to speak, is always a ruined thing, a ridiculous thing, which means that everything in this world is ridiculous and ruined. (128)

Words enforce a separation between reality and virtuality. Literature ruins reality and configures the absence that gives art its force of and through otherness. Yet, this activity is not the purpose of literature because giving art a specific purpose, as Benjamin does, subordinates it to the rigour of philosophy. Literature promotes "a passage to the outer *boundaries* of the subject and society" (Kristeva, *Revolutions* 17), beyond the limits of epistemology and thinkability. Thus, literature is the ideal exploration of the supposed unthinkables, such as the Singularity, because its position at the limits of subjectivity and community contains the empirical unthinkability whose limit is within the reign of appearances.

Conclusion

Recently V. S. Naipaul, the Nobel Prize-winning British novelist, declared that he would have no more to do with fiction, as non-fiction provides a better opportunity "to explore the world, the other world, the world that one didn't know fully" (qtd. in Donadio). Despite his experience with fictional literature, Naipaul places non-fiction on a higher pedestal in regards to the search for truth. Yet, Naipaul's *The Enigma of Arrival* eloquently depicts the postmodern symptom to always approach arrival but never truly arrive: the arrival to come. Non-fiction, as the popular science texts by Kurzweil, Brooks et al. demonstrate, is not truer than the fictional. Truth, if one may write of it, is the limit of experience and knowledge. The danger of Naipaul's assumption is that the predictions of non-fiction texts pretend truthfulness. Non-fiction allows an ideology to appear as inevitability. Foucault, in one of his few uses of the term ideology, critically writes that "Ideology does not question the foundation, the limits, or the root of representation" (*Order* 261). Literary fiction approaches and criticizes these limits and thereby opposes the ideological reification of possibility.

Technolibertarianism and the assumption of scientific objective purity ideologically support the Singularity and the inevitability of the technologies that produce it. Literature provides a mode to interrogate the supposed panacea the Singularity presents. Historical location determines the structure of thought but not its limit. Despite the many advances in knowledge, the absence of death remains the horizon that dictates and situates thought. The Singularity is an aberrant aversion to

thinking the unthinkable because it presumes an eventual understanding of all that is unthinkable. Literature, writing at the limits of language and representation, embraces and shakes its readers by situating them along that limit as well.

The trend towards documentaries and non-fictional work in the past few years relates to the Singularity's trend to devalue the ineffable. Imaginative fiction explicitly distances itself from truth. G. K. Chesterton, a prolific early nineteenth-century author, wrote: "Truth must of necessity be stranger than fiction. . . . For fiction is the creation of the human mind, and therefore is congenial to it" (80). This admission to its failure of representation undermines the novel in a time that believes in the infallibility of science. Even critics of technological development such as Jonathan Schell regard science and scientists as the prophets and shapers of postmodernity. This presumption bestows the technologies that science produces with an inevitability and purity as tools.

Literature, which admits its failures at the limits of truth, operates ideally to criticize technological devotion. To presume that society cannot uninvent nuclear weapons, or any such technology, presumes that the particular technology is completely distinct from the humanity with which it symbioses. The complex interaction between humanity and technology requires a method of interrogation that does not presume to present whole Truth. Thus literature is the ideal for questioning concerning technology.

The question concerning technology is unaskable and, when understood as such, allows the asking of other questions. Technology presents an otherness that always promises to arrive but whose arrival always already defers. The Singularity presents this otherness as a moment to pass, and therefore presumes that the question

of technology is not only askable but also answerable. The danger of this error is that, if scientists will eventually uncover the answer to the question of otherness, agency moves from the technologies and humanity into future scientists and subjects. This movement prevents the asking of important questions, which is a socially and politically virulent tactic. For example, during the recent flooding crisis in New Orleans, CNN reporter Anderson Cooper confronts Senator Mary Landrieu with important questions of the American government's accountability in the delayed rescue response. Landrieu responds, "there will be a time to talk about all of that. Trust me" (qtd. in "Anderson Cooper"). In regards to the questions and problems of technology, many researchers and Singularity theorists respond that there will be time, after the Singularity, to talk about all of that. Therefore, literature, a site subservient to science in postmodernity, is the point from which society must now deal with the questions.

These questions, which proliferate from the unaskable but approachable question concerning technology, are multiple and perhaps unanswerable. Lethem's novel, placing fictional scenarios in play with non-fictional technologies, adds vitality and complexity to Fukuyama's questions regarding the regulation of genetic engineering and human nature. Stephenson's questions regarding the virtues of posthumanism allows questions of nanotechnology and the disruption of spectacular society. These questions do not provide solutions, which are always already to come.

While the ethics of the "to come" are easy to criticize, its value is difficult to refute. Like critics of democracy who claim that as a system it is too inefficient and messy, critics of the "to come", for example Anis Shivani, desire an objective ethics

that Deuteronomically dictates behaviour. These critics desire an ethical code that language easily disseminates. Thus, these critics wish for non-fictional ethics. Fortunately, representation always falls short of truth and therefore cannot properly represent ethics. Death produces community produces ethics, therefore the ethics to come rely on the most absent of absences. Upon adopting and adapting to a new technology, humanity must approach it as a site of otherness to determine the ethics of its use.

The Singularity is a metaphor for the broader understanding of the promises and myths of technology within culture. These myths not only influence culture but also the character of the technologies of which these myths write. The promises of telecommunications networks, nanotechnology, genetic engineering, and Virtual Reality exist within the disastrous shadow of nuclear weapons; however, the enlightened progress of science promises this shadow's removal. But the shadow simply moves from a visible, thinkable entity to an unthinkable absence within supposedly liberatory technologies. Through approaching this absence, this thesis situates these technologies within a thinkable space that does not rely on the Singularity to overcome their dangerous issues. Wholesale uninvention is only possible if it is thinkable and determinable as necessary.

Despite writing of uninvention and regulation, I am not anti-technological. My criticism of technologies is towards the myths that promote fallacious notions like the Singularity to emerge. Uninvention is not necessary but we must necessarily acknowledge it as a possibility. The scientific method, while useful to solidify observations, results in preventing unexplored discussions when adapted to the social space because it already provides an answer. Technologies, as scientific

products, often exist within a space of unquestionable use. The lack of questions permits the continued existence of violence within the system, as both Cadigan and Gibson expose in regards to the Internet. In order to expose and discuss these dangers, we must leave sites of discussion open. The Singularity closes discussions through claiming that, past a certain point in the future, we cannot currently discuss technologies, although we can discuss them once society passes the Singularity. Humanity must embrace technologies not as tools to accomplish a specific task, but as symbiotic agents that create a complex community with human society by refiguring its limits.

Finally, I write of the limit of death once more. Death always occurs once more, its repetition is necessary for its role as a fluidly centring absence. The fear of this absence promotes the Singularity and its compulsion to transcendence. The Singularity supposedly reduces Hamlet's famous "To be or not to be" soliloquy to one sentence fragment: "To die, perchance." This "perchance" futilely attempts the injection of human will into the irrevocable absence. Literature approaches this absence and reinserts it into technological discourses. Thus, the role of the critic in this instance is to emphasize literature's opposition to technology, while also admitting its failure because literature too protests against the absence death signifies. Thus, literature and technology exist within a community deferring absence and undermining each other, which typifies the utopia to come. To approach death and to write death is to question with the knowledge of the unattainable answer; it is the movement to think the unthinkable. Thus, to write and to invent defers death while relying on the absence it promises. To write finally is

not to answer, but to continue the question, indefinitely. Writing answers the question to come and questions the answer to come

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